For Suppliers

SS SONY TECHNICAL STANDARDS

Système International d'Unités

SECURITY GRADE
CLASS C

MANAGEMENT REGULATIONS FOR THE ENVIRONMENT-RELATED SUBSTANCES TO BE CONTROLLED WHICH ARE INCLUDED IN PARTS AND MATERIALS

部品・材料における環境管理物質　管理規定

SS-00259

FOURTH EDITION

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SONY

Security Grade: Class C

The standards under this security grade shall be applied by and be in the custody of the following parties only:

(1) Sony Corporation (hereafter called Sony)
(2) Sony and the associated companies taking responsibility of the whole operations related to Sony brand products.
(3) The third parties specifically designated by any of the division of Sony or the associated companies.

For the handling of these standards in cases not specified above, refer to the secretariat of the Sony Technical Standards, Sony Corporation, Tokyo.

秘密区分：C級

この標準の管理・運用は，原則として次の範囲とする。

(1) ソニー株式会社（以下ソニーという）
(2) ソニーおよびソニーブランドの商品に関わる業務全般を行う関連会社
(3) ソニーまたは関連会社のいずれかの部門が指定した社外の関係者

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CONTENTS

SECURITY GRADE
CLASS C

SONY TECHNICAL STANDARDS

SS-00259-0

PART 0
GENERAL RULES OF MANAGEMENT REGULATIONS FOR THE ENVIRONMENT-RELATED SUBSTANCES TO BE CONTOROLLED WHICH ARE INCLUDED IN PARTS AND MATERIALS
部品・材料における環境管理物質　管理規定　通則

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CONTENTS

1. POSITION OF THIS TECHNICAL STANDARD

The purpose of regulating and issuing this Technical Standard is to satisfy the following conditions by conforming to the rules specified in “Management Standards regarding ‘The Environment-related Substances Requiring Control and Included in Products’ (i.e. the Management Standards)”:

1) To clarify “The Environment-related Substances to be Controlled which are Contained in Parts and Materials (i.e. ‘Environment-related Substances to be Controlled’ or ‘The Controlled Substances’)” defined in the Management Standards; and
2) To thoroughly notify the above-mentioned matter to the whole of Sony and to its suppliers.

2. OPERATIONAL PROCEDURE

1) Deliberations and decisions on matters regarding this Standard shall be made by the “Technical Committee for Environment-related Substances” composed of the representatives of both the divisions in charge of each product and each division. The head of the division promoting the company-wide standardization of technology shall approve the matters thus deliberated and decided.
2) When this Standard requires revising or abolishing, apply to the Technical Committee for Environment-related Substances for the revisions or abolishment. The Committee shall deliberate the applied contents and decide the revisions or abolishment.

3. BASIC POLICY

The “Target” (a combination of a substance and its purposes [or parts]) classified at Level 1 in each table must not be used for Sony products at all.

1) With regard to the quantitatively-measurable substances, their standard values must be set in light of (a) both the detection limits and the uncertainty of measurement equipment, and (b) the inclusion of natural impurities.
   In this case, measurement methods and judgment standards shall be decided separately as detailed regulations for operation.
2) With regard to the substances for which the quantitative measurement is difficult and the standard figures cannot be set, the fact that the substances are not used must be proved by the exchange of necessary documents or by other means.

SECURITY GRADE
CLASS C

SONY TECHNICAL STANDARDS

SS-00259-1

PART 1
MANAGEMENT STANDARDS FOR THE RESTRICTIVELY-USED SUBSTANCES INCLUDED IN PARTS AND DEVICES
部品・デバイス等に含有される使用制限物質の管理基準

FOURTH EDITION

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CONTENTS

1. PURPOSE

With regard to the “Environment-related Substances to be Controlled (‘Controlled Substances’)” contained in the parts and devices employed in Sony products, this Standard clarifies (1) banned substances, (2) substances to be phased out, and (3) excluded substance applications, in order to realize the following aims:

1) To prevent the above-mentioned substances from being used for Sony products;
2) To comply with related laws and regulations;
3) To reduce the influence of the above substances upon the ecosystem; and
4) To contribute to the preservation of the global environment.

2. SCOPE

2.1 Scope applicable to parts and materials

Targets are the parts, materials, and other articles that are procured by the Sony group or by third parties to which the Sony group outsources their design and production.

The targets need to satisfy the criteria specified in this Standard.
Target parts and materials:

- Semi-finished products (e.g. modules, functional units, board assemblies, and other assembly parts)
- Parts (electrical parts, mechanical parts, semiconductor devices, PWBs, recording media, packaging materials, and packaging components)
- Screws
- Accessories (mice, remote controllers, AC adopters, and other accessories with which you can use products)
- Materials constituting subsidiary parts and materials (e.g. adhesives, adhesive tapes, and soldering materials) used for products
- Instruction manuals
- Repair parts for products on the market (Sony will later issue a notice to clarify details.)
- Packaging materials that parts suppliers use for delivery and protection (Refer to Table 4.3a for details)

2.2 Scope applicable to products

1) Sony products that are designed, manufactured and sold, or distributed by the Sony group
2) Sony products being sold or distributed with the Sony group’s logos on them, whose design and production are outsourced to third parties
3) Third parties’ products whose design and production are outsourced to the Sony group (except when the parts and materials are specified by the third parties)

Regarding the substances and/or their purposes whose use is banned by regional or country laws and ordinances, the laws and ordinances must be observed and followed even though the substances or their purposes are not clearly regulated in this Standard.

3. TERMS AND DEFINITIONS

In this Standard, terms are defined in the following manners.

1) "Environment-related Substances to be Controlled ('Controlled Substances')"
Among the substances contained in parts and devices, "Environment-related Substances to be Controlled ('Controlled Substances')" are those which, according to Sony's judgment, have significant environmental-impact on both humans and the globe.

2) Management standards
To manage the above-mentioned substances, the following three levels and classification of Exemption are used.
   a) Level 1
   The substances and/or their purposes classified into this level are those whose use must be banned immediately.
   b) Level 2
   The substances and/or their purposes classified into this level are those for which a period for phase-out is individually set.
   On or after the date set in each table, the substances in the respective table will be classified into Level 1 and must not be contained in parts and materials.
   c) Level 3
   No deadline for banning the use is currently set for the substances classified into this level. They shall be classified into Level 2 to be banned in phases, depending on the availability of alternative parts and materials that satisfy the intended application.
   d) Exemption
   The substance applications classified as Exemption are those not regulated by the law or excluded from the 'Controlled Substances' due to the unavailability of adequate alternative parts and materials on the market that satisfies the intended application.

3) Contained
"Contained" is a situation in which a substance is added to, blended with, fills up, or adheres to (1) the parts or devices employed in products, or (2) the materials used for the parts or devices, regardless if the situation is intentionally created or not. (When a substance is unintentionally contained in, or added to a product in a processing process, this situation is also regarded as "Contained.")

4) Impurity
An "Impurity" is a substance that satisfies either or both of the following conditions:
   a) One contained in a natural material, which cannot technically be removed in a refining process totally (i.e. natural impurities); and
   b) One generated in a synthesis process, the total removal of which is technically impossible.

Additionally, there are substances called "impurities," the name of which is used to distinguish them from main materials. If they are used for the purpose of changing the characteristics of a material, they are treated as "Contained."
Furthermore, there are substances called Dopants (Doping Agents) that are intentionally added to manufacture semiconductor devices, etc. They are not treated as "Contained" if present in the devices in a very small amount.
When the allowable concentration of a 'Controlled Substance' is specified in this Standard, the concentration must be observed even if the substance, as an "Impurity," mingles with or adheres to parts or devices.

5) The date on or after which Sony won't accept the targets
This indicates the date on or after which Sony won't accept the parts and/or materials specified in the corresponding column.

6) Plastics defined in SS-00259
– Materials and raw materials composed of synthetic high-molecular polymers –
More specifically, "plastics" mainly mean the following articles composed of synthetic high-molecular polymers: resins, films, adhesives, adhesive tapes, molded products, products made of synthetic rubber, and plastics made from raw materials of plant origin.
When a natural resin is synthesized with any one of the above articles, the synthetic substance is a plastic.

4. MANAGEMENT STANDARDS FOR "ENVIRONMENT-RELATED SUBSTANCES TO BE CONTROLLED"

4.1 "Environment-related Substances to be Controlled ('Controlled Substances')"

Refer to Table 4.1 of "Environment-related Substances to be Controlled" regulated in this Standard.

Table 4.1 List of "Environment-related Substances to be Controlled ('Controlled Substances')"

Substances	
Heavy metals	Cadmium and cadmium compounds
	Lead and lead compounds
	Mercury and mercury compounds
	Hexavalent chromium compounds
Chlorinated organic compounds	Polychlorinated biphenyls (PCB) Polychlorinated naphthalenes (PCN) Polychlorinated terphenyls (PCT)
	Chlorinated paraffins (CP)
	Other chlorinated organic compounds
Brominated organic compounds	Polybrominated biphenyls (PBB)
	Polybrominated diphenylethers (PBDE)
	Other brominated organic compounds
Tributyltin compounds Triphenyltin compounds	
Asbestos	
Specific azo compounds	
Formaldehyde	
Polyvinyl chloride (PVC) and PVC blends	

Table 4.2 Main "Targets" and "The date on or after which Sony won't accept the targets" regarding 'Controlled Substances'

Substances: Cadmium and cadmium compounds		
All metals, alloys, inorganic compounds, metal-organic compounds, inorganic salts, organic salts, and other substances		
Targets		The date on or after which Sony won't accept the targets
Level 1	- Packaging materials (Refer to page 13.) - The stabilizers, pigments, or dyes used for plastics (including rubber) materials (e.g. labels, cabinets, phonograph records, binding band, the keys of remote controllers, the outer plastic resins of electrical parts, and the insulators of electrical wiring) - Paints, inks - Surface treatment (e.g. plating), coating - Photographic films - Fluorescent lamps (small-sized ones, straight-tube ones)	Sony has been declining to accept them.
	Cadmium and cadmium compounds except those classified into Level 2 and used for the intended application of Exemption Typical examples are given below. - Switches, relays, breakers, DC motors, and other electrical contact points - Fuse elements of temperature fuses - Glass, and the pigments as well as dyes of glass paints (paints for glass and the pigments as well as dyes used for glass) - Solder (whose cadmium concentration is more than 20 ppm) - CdS-photocells and the phosphors contained in fluorescent display devices - Resistor elements (glass frit)	January 1, 2005
Level 2	- Parts composed of metals containing zinc (e.g. brass, zinc for die casting) whose cadmium concentration is more than 100 ppm	October 1, 2005
Exemption	- Cadmium and cadmium compounds in electrical contacts and cadmium plating of electrical contacts, for which high reliability is required and which has no alternative materials - Cadmium in optical glass, filter glass	

Allowable concentration: Less than 5 ppm for plastics (including rubber), paints, and inks

Standards for measurement

1) Pre-conditioning

Typical pre-conditioning methods are as follows:

(1) Incineration under the existence of sulfuric acid;
(2) A pressurized acid decomposition method done in a sealed container (a microwave decomposition method [e.g. EPA 3052:1996, EN 13346:2000]);
(3) An acid decomposition method under the existence of nitric acid, hydrogen-peroxide water and hydrochloric acid (e.g. EPA3050B Rev.2:1996); and
(4) A wet decomposition method under the existence of sulfuric acid, nitric acid, and hydrogen-peroxide water (e.g. BS EN 1122:2001).

Note: In the process of preconditioning, precipitates (insoluble matter) must be totally dissolved by some means (e.g. alkali fusion).

2) Measurement methods

Typical measurement methods are as follows:

(1) Inductively Coupled-Plasma-Atomic (Optical) Emission Spectroscopy (ICP-AES [ICP-OES]) (e.g. EN ISO 11885:1998);
(2) Atomic Absorption Spectroscopy (AAS) (e.g. EN ISO5961:1995); and
(3) Inductively Coupled-Plasma Mass Spectroscopy (ICP-MS).

- If a combination of a pre-conditioning method and a measurement method can guarantee that the lower determination limit of cadmium is less than 5 ppm, the combination is also applicable.
  Any one of the measurement methods above (except AAS) enables you to analyze cadmium and lead simultaneously.

Note: The elution methods, including EN71-3:1994, ASTM F963-96a, and ISO 8124-3, must not be applied to the pre-conditioning methods prescribed in this Standard.
JIS K0102-55, a test for industrial sewage, specifies measurement methods only; therefore you must specify the pre-conditioning method that is actually applied.

Substances: Lead and lead compounds		
All metals, metal alloys, inorganic compounds, organic compounds, inorganic salts, organic salts, and other substances		
Targets		The date on or after which Sony won't accept the targets
Level 1	- Packaging materials (Refer to page13.) - The paints, and inks containing lead, which are used for PWBs	Sony has been declining to accept them.
	- Surface coatings (plating) for the external electrodes, lead wires, and other areas of parts (e.g. electrical parts, semiconductor devices, and heat sinks) - The stabilizers, pigments, and dyes contained in the plastic (including rubber) materials that are used for outer and exposed areas of the following articles: mice, devices, AC adaptors, connection cords, remote controllers, and power supply cords - The paints and inks used for outer and exposed areas of devices	April 1, 2004

<table>
<tr>
<td>Level 1</td>
<td>Lead and lead compounds except those classified into Level 3 and used for the intended application of Exemption
Typical examples are given below.
- The surface coatings for the external electrodes, lead wires, etc. of the parts contained in AC adaptors, remote controllers, semiconductor devices, etc.
- Of the types of leaded solder, those that satisfy both of the following conditions:
(1) Leaded solder that contains less than 85 wt% of lead; and
(2) Leaded solder whose lead concentration is more than 1000 ppm
- All kinds of alloys (including solder materials) whose individual lead/lead compound concentration exceeds the regulated allowable concentration (Refer to the table in Exemption(*1).)
- The stabilizers, pigments, and dyes contained in the plastic (including rubber) materials that are used for areas (excluding outer and exposed ones) of the following articles: mice, devices, AC adaptors, connection cords, remote controllers, and power supply cords
- The paints and inks used for areas other than the outer and exposed ones of devices</td>
<td>January 1, 2005</td>
</tr>
<tr>
<td>Level 3</td>
<td>- Stabilizers used for electroless gold plating as well as electroless nickel plating and lead contained in additives</td>
<td></td>
</tr>
<tr>
<td>Exemption</td>
<td>- High melting temperature type solder (i.e. lead based alloys containing 85 wt% or more)
- Electronic ceramic parts (e.g. piezoelectric devices, dielectric ones, and magnetic ones [ferrites])
- Optical glass, filter glass
- Glass of cathode ray tubes, glass of electronic components, and glass of fluorescent tubes
The above glass materials include adhesives, resistor elements, glass frit, conductive pastes (silver or copper ones), and sealing materials.
- Solder consisting of more than two elements for the connection between the pins and the package of microprocessors with a lead content of more than 80% and less than 85% by weight
- Solder to complete a viable electrical connection between semiconductor die and carrier within integrated circuit Flip Chip packages
- Allowable concentration of lead as an additive in the following alloys(*1):
<table>
<tr><td>Type of alloy</td><td>Allowable content of lead</td></tr>
<tr><td>Steel</td><td>up to 0.35 wt%</td></tr>
<tr><td>Aluminum alloys</td><td>up to 0.4 wt%</td></tr>
<tr><td>Copper alloys (including brass and phosphor bronze)</td><td>up to 4 wt%</td></tr>
<tr><td>Solder</td><td>up to 1000 ppm</td></tr>
</table>
</td>
<td>N/A</td>
</tr>
</table>

Allowable concentration: Less than 100 ppm for plastics (including rubber), paints, and inks
Standards for measurement 1) Pre-conditioning Typical pre-conditioning methods are as follows: (1) Incineration under the existence of sulfuric acid; (2) A pressurized acid decomposition method done in a sealed container (a microwave decomposition method [e.g. EPA 3052:1996, EN 13346:2000]); (3) An acid decomposition method under the existence of nitric acid, hydrogen-peroxide water, and hydrochloric acid (e.g. EPA3050B Rev.2:1996); and (4) A wet decomposition method under the existence of nitric acid and hydrogen-peroxide water Note: In the process of preconditioning, precipitates (insoluble matter) must be totally dissolved by some means (e.g. alkali fusion). 2) Measurement methods Typical measurement methods are as follows: (1) Inductively Coupled-Plasma-Atomic (Optical) Emission Spectroscopy (ICP-AES [ICP-OES]) (e.g. EN ISO 11885:1998); (2) Atomic Absorption Spectroscopy (AAS) (e.g. EN ISO 5961:1995); and (3) Inductively Coupled-Plasma Mass Spectroscopy (ICP-MS). - If a combination of a pre-conditioning method and a measurement method can guarantee that the lower determination limit of lead is less than 30 ppm, the combination is also applicable. Any one of the measurement methods (except AAS) enables you to analyze cadmium and lead simultaneously. Note: The elution methods, including EN71-3:1994, ASTM F963-96a, and ISO 8124-3, must not be applied to the pre-conditioning methods prescribed in this Standard. EN 1122 is not applicable to the pre-conditioning methods for lead. JIS K0102-54, a test for industrial sewage, specifies measurement methods only; therefore you must specify the pre-conditioning method that is actually applied.

Substances: Mercury and mercury compounds		
All metals, alloys, inorganic compounds, organic compounds, inorganic salts, organic salts, and other substances		
Targets		The date on or after which Sony won't accept the targets
Level 1	- Packaging materials (Refer to page 13.) - Paints, and inks - Hour meters - Small-sized fluorescent lamps (e.g. those for the back lights of liquid crystal displays) whose mercury content (per lamp) is more than 10 mg - Straight-tube fluorescent lamps whose mercury content (per lamp) is more than 20 mg - The relays, switches, or sensors whose contacts contain mercury - Mercury or its compounds mixed in plastics	Sony has been declining to accept them.
	- Small-sized fluorescent lamps whose mercury content (per lamp) is 5 mg or more - Straight-tube fluorescent lamps whose mercury content (per lamp) is 5 mg or more - Mercury and mercury compounds except those classified into Exemption	January 1, 2005
Exemption	- Lamps other than small-sized fluorescent ones and straight-tube ones (e.g. high-pressure mercury lamps) - Small-sized fluorescent lamps whose mercury content (per lamp) is less than 5 mg - Straight-tube fluorescent lamps whose mercury content (per lamp) is less than 5 mg	N/A

Substances: Hexavalent chromium compounds		
All inorganic compounds, organic compounds, inorganic salts, organic salts, and other substances Metal chromium and chromium contained in alloys are excluded from the targets.		
Targets		The date on or after which Sony won't accept the targets
Level 1	- Packaging materials (Refer to page 13.)	Sony has been declining to accept them.
	- All purposes (e.g. those [1] contained in inks and paints as components of their pigments, and [2] applied for preventing rust on surfaces of plating [on screws, steel plates, etc.])	January 1, 2005

Substances: Polychlorinated biphenyls (PCB), polychlorinated naphthalenes (PCN), polychlorinated terphenyls (PCT)		
Targets		The date on or after which Sony won't accept the targets
Level 1	- All purposes (e.g. those for capacitors, lubricants, insulating oils, transformers containing oil, paints, and used as flame retardants in plastics)	Sony has been declining to accept them.

Substances: Chlorinated paraffins (CP)		
Short-chain chlorinated paraffins with the following characteristics: C10-13, Cl = 48 wt% or more		
Targets		The date on or after which Sony won't accept the targets
Level 1	- The cabinets and PWBs of products (including accessories)	Sony has been declining to accept them.
Level 3	- All purposes except those classified into Level 1	

Substances: Other chlorinated organic compounds		
Targets		The date on or after which Sony won't accept the targets
Level 3	- The plasticizers or flame retardants contained in plastics, and the flame retardants used for PWBs	

Substances: Polybrominated biphenyls (PBB)		
Targets		The date on or after which Sony won't accept the targets
Level 1	- All purposes (e.g. those for the flame retardants contained in plastics)	Sony has been declining to accept them.

SubstancesPolybrominated diphenylethers (PBDE)		
Targets		The date on or after which Sony won't accept the targets
Level 1	- All purposes (e.g. those for the flame retardants contained in plastics)	Sony has been declining to accept them.
	- The parts made by the dies that were made in December 2002 or earlier (Applicable only to the bodies of the displays and TV sets shipped to countries other than European ones) The parts whose molding dies have been made since January 2003 must not contain PBDE.	January 1, 2005

Substances: Other brominated organic compounds		
Targets		The date on or after which Sony won't accept the targets
Level 3	- The flame retardants contained in plastics, or used for PWBs	

Substances: Tributyltin compounds and triphenyltin compounds		
Targets		The date on or after which Sony won't accept the targets
Level 1	- All purposes (e.g. those for paints, inks, preservatives, and fungicides)	Sony has been declining to accept them.

Substances: Asbestos		
Targets		The date on or after which Sony won't accept the targets
Level 1	- All purposes (e.g. those for insulators and fillers)	Sony has been declining to accept them.

<table>
<tr><td colspan="2">Substances: Specific azo compounds</td><td></td></tr>
<tr><td colspan="2">Targets</td><td>The date on or after which Sony won't accept the targets</td></tr>
<tr><td>Level 1</td><td>- Azodyes that release one or more of the aromatic amines through decomposition, listed in Table 4.2a, may not be used in the articles, which may come into direct and prolonged contact with the human skin (e.g. belts, straps, ear phones, head phones, and shoulder pads for bags)
- Pigments containing the specific azo compounds(*2) used for the parts of products, which may come into direct and prolonged contact with the human skin
(*2) The specific azo compounds that produce one or more amines specified in Table 4.2a when they are decomposed on the basis of a test method specified in Germany Law for Foods and Consumer Products.</td><td>Sony has been declining to accept them.</td></tr>
<tr><td>Level 3</td><td>- Parts containing the specific azo compounds(*2) that do not come into continuous contact with the human skin (e.g. cushions, mice, remote controllers, and carrying bags).
(*2) The specific azo compounds that produce one or more amines specified in Table 4.2a when they are decomposed on the basis of a test method specified in Germany Law for Foods and Consumer Products.</td><td></td></tr>
<tr><td colspan="3">Test methods (for reference)
The methods for decomposing azo compounds and then extracting amines are as follows:
1) EN 14362-1:2003, “Textiles-Methods for the determination of certain aromatic amines derived from azocolorants
-Part 1: Detection of the use of certain azocolorants accessible without extraction”;
2) CEN ISO/TS 17234:2003, “Leather-Chemical tests–Determination of certain azocolorants in dyed leathers”; and
3) EN 14362-2:2003, “Textiles-Methods for the determination of certain aromatic amines derived from azocolourants
-Part 2: Detection of the use of certain azocolorants accessible by extracting the fibres.”</td></tr>
</table>

Table 4.2a List of the amines that must not be produced when azo compounds are decomposed

CAS No.	Amines
92-67-1	4-aminodiphenyl
92-87-5	Benzidine
95-69-2	4-chloro-o-toluidine
91-59-8	2-naphthylamine
97-56-3	o-aminoazotoluene
99-55-8	2-amino-4-nitrotoluene
106-47-8	p-chroloaniline
615-05-4	2,4-diaminoanisole
101-77-9	4,4’-diaminodiphenylmethane
91-94-1	3,3’-dichlorobenzidine
119-90-4	3,3’-dimethoxybenzidine
119-93-7	3,3’-dimethylbenzidine
838-88-0	3,3’-dimethyl-4,4’-diaminodiphenylmethane
120-71-8	p-cresidine
101-14-4	4,4’-methylene-bis-(2-chloroanilene)
101-80-4	4,4’-oxideaniline
139-65-1	4,4’-thiodianiline
95-53-4	o-toluidine
95-80-7	2,4-toluylenediamine
137-17-7	2,4,5-trimethylaniline
90-04-0	o-anisidine
60-09-3	4-aminoazobenzene

<table>
<tr><td colspan="3">Substance: Formaldehyde</td></tr>
<tr><td colspan="2">Targets</td><td>The date on or after which Sony won't accept the targets</td></tr>
<tr><td rowspan="2">Level 1</td><td>- The wooden products made from fiberboard, particleboard, or plywood, which are employed in products for import into Europe (e.g. speakers and racks)</td><td>Sony has been declining to accept them.</td></tr>
<tr><td>- The wooden products made from fiberboard, particleboard, or plywood, which are employed in products for destinations other than Europe (e.g. speakers, racks)</td><td>January 1, 2005</td></tr>
<tr><td colspan="3">Reference value (emission content): Obtain the value by any one of the following methods.
1) [With a chamber method]
Concentration in the air: Equal to or less than 0.1 ppm (or 0.124 mg/m^3) in an air-tight test chamber whose volume is 12 m^3, 1 m^3, or 0.0225 m^3
2) [With a perforator method]
- Equal to or less than 6.5 mg in 100 g of a particleboard without a surface treatment (the average value during six months)
- Equal to or less than 7.0 mg in 100 g of a fiberboard without a surface treatment (the average value during six months)
- Equal to or less than 8.0 mg in 100 g of a particleboard/fiberboard without a surface treatment (the value derived from the one-time measurement based on EN120)
3) [With a desiccator method]
- Average content: 0.5 mg/l or less
- Maximum content: 0.7 mg/l or less
(Use N=2 to check the average and maximum values.)</td></tr>
<tr><td colspan="3">Measurement methods:
- A chamber method specified in EN-717-1:2002 (Wood based panels; determination of formaldehyde release; formaldehyde emission by the chamber method)
- A perforator method specified in EN 120 (Wood based panels; determination of formaldehyde content; extraction method called perforator method; EN120:1992)
- A desiccator method specified in JIS A 5905 (Fiberboards) and JIS A 5908 (Particleboards)</td></tr>
</table>

<table>
<tr><td colspan="3">Substances: Polyvinyl chloride (PVC) and PVC blends</td></tr>
<tr><td colspan="2">Targets</td><td>The date on or after which Sony won't accept the targets</td></tr>
<tr><td rowspan="2">Level 1</td><td>- Vinyl ties made of PVC and PVC blends</td><td>Sony has been declining to accept them.</td></tr>
<tr><td>- Sheets used as packaging materials (e.g. air cushions, blister packs, and protective bags)
- Packaging materials to be packaged together with the product, such as remote controllers and cables (e.g. bags, tapes, cartons, blister packs)</td><td>January 1, 2005</td></tr>
<tr><td rowspan="2">Level 2</td><td>- Heat shrink tubes</td><td>April 1, 2005</td></tr>
<tr><td>- Sheets and laminates used for the exterior of wooden products (e.g. laminates for wooden cabinets and wooden speakers)</td><td>January 1, 2006</td></tr>
</table>

	Substances: Polyvinyl chloride (PVC) and PVC blends	The date on or after which Sony won't accept the targets
Level 2	- Connection cords (1): those for wearable equipment (e.g. cables for ear phones, head phones, ear microphones)	January 1, 2006(*3)
	- Parts consisting of wires (e.g. connectors with cords) and wires used for internal wiring (e.g. motor leads) - Coating for insulation and protection used for the inside and outside of devices, insulated tubes, insulated boards, decorative panels, labels, carrying belts, spacers, holders, covers, ducts, etc. - Power supply cords, including plugs, connectors, or cord bushes (2P/3P [Electrical Appliances and Material Safety Law]) - Connection cords (2): those for USB, iLink, RCA, AC adaptors secondary leads, multi cables, speaker cords	January 1, 2007(*3)
	- Harnesses and processing wires designed by Sony (e.g. coaxial cables, flat wires, double insulation wires, shielded wires)	January 1, 2008(*3)
Level 3	- Power supply cords, including plugs, connectors, or cord bushes (2P/3P [U/C]) - Developing papers - Insulation caps for capacitors, power supply switches, and fuses - Trays, magazine sticks, reels, embossed carrier tapes used by parts suppliers for parts packaging - Other parts except those classified into Level 1, 2, and Exemption	
Exemption	- Binders made of resin - Polyvinyl electrical wires for high voltage - Insulating tapes - Speaker grilles - Power supply cords for import into EU countries - Parts, which are not classified into Level 1, 2, or 3, and use the blends made from vinyl chloride copolymers or polyvinyl chloride and from other polymers - Transformer leads of which the joint is fixed by varnish impregnation - Curl cords - Extra fine electrical wires that are AWG (American Wire Gauge) 36 or more - Use of PVC and PVC blends in the professional-use cables, to which general-purpose ones cannot be applied (e.g. cables for broadcast cameras and microphones)	N/A

(*3) Sony will not accept any of the targets, which will become a component of a new Sony product that is to be in commercial mass production on and after the designated date.

4.2 Additional rules for packaging materials

4.2.1 Definitions of "packaging materials"

Packaging shall mean all products made from any materials of any nature to be used for the containment, protection, handling, delivery and presentation of goods, from raw material to processed goods from the producer to the user or consumer

Note: Reusable or returnable packaging under the control of traders or suppliers is out of object.

Table 4.3 Additional rules for packaging materials

Substances: Heavy metals (cadmium, lead, mercury, and hexavalent chromium)		
Articles that satisfy not only the rules specified in Table 4.2, but also the following conditions determined by the regulations of relevant laws		
Targets		The date on or after which Sony won't accept the targets
Level 1	- The articles listed in the PACKAGING of Table 4.3a	Sony has been declining to accept them.
Exemption	- Cartons for returnable boxes owned by part suppliers	N/A

Allowable concentrations

- "Less than 100 ppm" is determined as the allowable total-concentration of four heavy metals (cadmium, lead, ,mercury, and hexavalent chromium) contained in each part, ink, or paint that constitutes a package. Regarding allowable concentrations of cadmium and lead contained in plastics (including rubber), paints, and inks, however, regulations for "Cadmium and cadmium compounds" and "Lead and lead compounds" must also be satisfied.

  (Typical plastic parts: handles, cushions, films, reels, tapes, magazine sticks [including stoppers], polyvinyl bags, binding ties, and trays)

As for chromium, first analyze total chromium and verify whether the total concentrations of the four elements (i.e. cadmium, lead, mercury, and total chromium) are less than 100 ppm. When analyzing, the same pre-conditioning methods as those used for cadmium and lead are applicable.

As the result, if the total concentrations of the four elements are 100 ppm or more, verify the subtraction of the total chromium content from the total concentrations of the four elements results in less than 100 ppm, and then analyze and confirm the hexavalent chromium is not contained in the total chromium.

Standards for measurement

1) Pre-conditioning

   For cadmium and lead, follow the methods respectively specified on pages 5 and 7.

   For total chromium, follow the methods specified on page 5.

   For mercury, typical test methods are as follows:

   (1) A pressurized acid decomposition method done in a sealed container (a microwave decomposition method [e.g. EPA 3052:1996]);

   (2) A heating evaporation-cold-vapor mercury-atomic-absorption method (Full-automatic test equipment is marketed.); and

   (3) A wet decomposition method (e.g. Kjeldahl method) in which a decomposition flask with a reflux condenser is used to decompose mercury by sulfuric acid or nitric acid.

Note: In the process of pre-conditioning, strong attention is required to avoid emerging mercury sublimation, and precipitates (insoluble matter) must be totally dissolved by some means (e.g. alkali fusion).

2) Measurement methods

   Regarding the measurement of cadmium, lead, and total-chromium concentrations, follow the methods specified on pages 5 and 7.

   Regarding the measurement of mercury concentrations, follow the methods on the above pages, too.

   When the mercury concentration is predicted to be low, you are advised to use one of the following methods:

   (1) A reduction-evaporation atom-absorption method,

   (2) ICP-AES (ICP-OES) with a hydride-generation apparatus; and

   (3) ICP-MS method with a hydride-generation apparatus.

Standard methods for detecting hexavalent chromium:
Note: Standard methods specified hereafter are applicable when total concentration of the four elements of cadmium, lead, mercury, and total chromium in packaging materials is 100 ppm or more.
Detection methods:
1) Pre-conditioning
   - Elution methods such as warm water sampling process and alkali fusion (e.g. EPA 3060A) under the formation of a complex by adding 1.5 diphenylcarbarazide

2) Measurement method
   - Ultraviolet-Visible (UV/VIS) Spectroscopy (e.g. EPA 7196A)

If a combination of a pre-conditioning method and a measurement method can guarantee the following lower detection limits, the combination is also available:
(1) Less than 5 ppm for mercury;
(2) Less than 5 ppm for cadmium;
(3) Less than 5 ppm for the total chromium; and
(4) Less than 30 ppm for lead.

Any one of the measurement methods (except AAS) enables you to analyze concentrations of cadmium, lead, and the total chromium simultaneously.

Table 4.3a Descriptions of packaging materials

For Consumer and Professional Products (Used for Transportation of Sony Products)		
PACKAGING		
1.	Carton	Including master carton and sub-master carton made from any materials.
2.	Cushion	
3.	Protection Sheet/Bag	Such as made from foamed plastic or nonwoven fabric
4.	Poly Bag	
5.	Envelope	Such as used for warranty card
6.	Blister Pack	
7.	Film	Including protection films such as used for the LCD displays
8.	Clamshell	
9.	Separator/Spacer/Partition	
10.	Printing Ink	Used for packaging
11.	Adhesive Tape	Such as used for closing carton or poly bag, or, fixing or protection for removable component
12.	Staple	
13.	Label	Sticked on the packaging component under control of Sony, such as bar-code label
14.	Joint	Carton joint
15.	Binding Band	Such as PP Band
16.	Hanging Tab	
17.	Carrying Handle	Including its related components
18.	Crate	Such as wooden frame
19.	Shrink Film	
20.	Bottle	
21.	Sleeve	
22.	Jewel Box	Such as packaging for fountain pen
23.	Skid	

NOT PACKAGING		
1.	CD Case/Bag	Cases or bags such as used for video tape, MD, MO, DVD and Spindle case which are defined as part of product.
2.	Inlay Card/Label	Such as index-card or label for CD and other recording media
3.	Carrying Case/Pouch	Such as used for headphones, Walkman, camera, which are defined as part of product.
4.	Label	Sticked on except packaging item
5.	Label	Sticked by third parties such as cargo label and/or invoice

For Device, Semiconductor and any other components: Add above		
PACKAGING		
1.	Magazine Stick	Such as used for IC's
2.	Stopper	
3.	Tray	
4.	Reel	

For Logistics Items: Add above		
PACKAGING		
1.	Pallet	Made from wood, plastic, paper, etc. which is used in one-way transportation, including slip sheet.
2.	Crate	Such as wooden container
3.	Stretch Film	Wrap around palletized unit
4.	Wooden Container	
5.	Items used for over packaging	Such as carton, cushion, tape, etc. which is used for component delivery
6.	Band/String	Such as PP Band
NOT PACKAGING		
1.	Shipping/AirContainer	Such as 40 ft container for boat, and air cargo container

4.3 Additional rules for batteries (Applicable to all batteries in commercial distribution)

Table 4.4 Additional rules for batteries

Substances: Heavy metals (cadmium, lead, and mercury)			
All metals, alloys, inorganic compounds, metal-organic compounds, inorganic salts, organic salts, and cadmium-, lead-, and mercury-compounds			
Targets			The date on or after which Sony won't accept the targets
Level 1	Cd	- The NiCd batteries and battery packs that are accepted as new parts where the cadmium content in proportion to the total weight of each battery is 0,002% or more. However, Sony won't accept all NiCd batteries or battery packs with more than 0,002% Cadmium in or after January 2007.	April 1, 2003
	Pb	- The batteries (excluding small-size sealed acid-ones) and battery packs whose lead content, in proportion to the total weight of each battery, is 0.4% or more	Sony has been declining to accept them.
		- The small-size sealed lead-acid batteries that are accepted as new parts However, all small-size sealed lead-acid batteries must not be received in or after January 2005.	April 1, 2003
	Hg	- The batteries (excluding coin cell ones) and battery packs whose mercury content, in proportion to the total weight of each battery, is 0.0005% or more (comment: only changed the order of the two points for clearer understanding, that in general 5 ppm, for coin cells 2%) - Coin cell batteries whose mercury content, in proportion to the total weight of each one, is 2% or more	Sony has been declining to accept them.
Exemption	Pb	- The batteries (excluding small-size sealed lead-acid ones) and battery packs whose lead content, in proportion to the total weight of each battery, is less than 0.4% However, the leaded solder and lead used for plastics (including rubber), paints, and inks for battery packs, which are classified into Level 1, are subject to the corresponding regulations.	N/A
	Hg	- Coin cell batteries whose mercury content, in proportion to the total weight of each one, is less than 2% - The batteries (excluding coin cell ones) and battery packs whose mercury content, in proportion to the total weight of each battery, is less than 0.0005%	N/A

5. SPECIFICATION EXCHANGE WITH BUSINESS PARTNERS

Either the sentence, "This part should not contain any substances which are specified in SS-00259-1," or one that conveys the same meaning must clearly be written on the drawings or specifications for parts and materials that are lent out to suppliers by Sony.

Regarding the allowable concentrations regulated in this Standard, suppliers must comprehend and control them with adequate methods. For the targets classified into Level 1 for which strict controls are needed to follow relevant laws and regulations, suppliers must prove that the allowable concentrations of the Level 1 substances/purposes meet those required in this Standard by applying the measurement methods where specified. **Suppliers must have control over concrete methods for the proof by following "Guidance for Environment Related Quality Assurance" and the detailed regulations for operation that are separately regulated by the procurement divisions of Sony.**

APPENDIXES

1. SUBSTANCES, AND LAWS AND REGULATIONS IN VARIOUS COUNTRIES

2. DETAILS OF THE SUBSTANCES IN QUESTION (TYPICAL EXAMPLES)

- Cadmium and cadmium compounds
- Lead and lead compounds
- Mercury and mercury compounds
- Hexavalent chromium compounds
- Polychlorinated biphenyls (PCB), polychlorinated naphthalenes (PCN), polychlorinated terphenyls (PCT)
- Chlorinated paraffins (CP)
- Polybrominated biphenyls (PBB)
- Polybrominated diphenylethers (PBDE)
- Tributyltin compounds and triphenyltin compounds
- Asbestos
- Formaldehyde
- Polyvinyl chloride (PVC) and PVC blends

Disclaimer: This list is illustrative, and Sony Cooperation does not represent that it is exhaustive.

1. SUBSTANCES, AND LAWS AND REGULATIONS IN VARIOUS COUNTRIES

Note) The following are the contents confirmed as of September 2002. The contents of the laws and regulations may be changed, so that it is necessary to confirm the latest versions of relevant laws and regulations.

Substances	Laws and regulations
Cadmium and cadmium compounds	EU Directive
	Regulations in each EU countries
	(EU) RoHS Directive, etc.
	(EU) Battery Directive
Lead and lead compounds	(The U. S.) The Laws of the State of California (Proposition 65)
	(EU) RoHS Directive
	(EU) Battery Directive
Mercury and mercury compounds	Regulations in the Netherlands
	(EU) RoHS Directive
	Regulations in Denmark
	Regulations in Sweden
	China regulations on batteries
Hexavalent chromium compounds	EU Directive
	(EU) RoHS Directive
Polychlorinated biphenyls (PCB) Polychlorinated naphthalenes (PCN) Polychlorinated terphenyls (PCT)	(Japan) Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances (Class 1)
	76/769/EEC
Short-chain chlorinated paraffins (CP) (C10-13) (Cl = 48 wt% or more)	No laws and regulations regulate them. However, the Eco-label is used to distinguish the substances that contain short-chain chlorinated paraffin. (Blue angel marks, TC 095, etc. are also used for this purpose.)
Polybrominated biphenyls (PBB)	EU Directive
	(EU) RoHS Directive
Polybrominated diphenylethers (PBDE)	EU Directive
	(EU) RoHS Directive
Tributyltin compounds Triphenyltin compounds	(Japan) Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances (Class 1, 2)
Asbestos	(Japan) Industrial Safety and Health Law, etc.
Formaldehyde	(Germany) Regulations on Formaldehyde, (Denmark) Regulations on Formalim, etc.
Specific azo compounds	EU Directive, 76/769/EEC
Heavy metals (lead, cadmium, mercury, and hexavalent chromium)	EU Directive on Packaging and Packaging Waste (94/62/EC), etc.
	(New York and other 16 states in the U.S.) Regulations on Heavy Metals in Packaging Materials

2. DETAILS OF SUBSTANCES (TYPICAL EXAMPLES)

• Cadmium and cadmium compounds

1. Examples: All substances containing cadmium or cadmium compounds

Name	CAS No.	Chemical formula	Main purposes
Cadmium	7440-43-9	Cd	Connection materials, surface treatment NiCd batteries
Cadmium alloys			Low melting point solder, fuses, etc.
Cadmium oxide	1306-19-0	CdO	Pigments, alkaline batteries, and materials for chemical synthesis
Cadmium chloride	10108-64-2	$CdCl_2$	Plating bath, the stabilizers used for vinyl chloride
Cadmium sulfide	1306-23-6 8048-07-5	CdS	Pigments, paints, inks, and light receiving elements for semiconductors
Cadmium nitrate	10325-94-7	$Cd(NO_3)_2$	Coloring agents, batteries, and photographs
Cadmium nitrate tetrahydrate	10022-68-1	$Cd(NO_3)_2 \cdot 4H_2O$	
Cadmium sulfate	10124-36-4	$CdSO_4$	NiCd batteries, Reagent
Cadmium stearate	2223-93-0	$Cd(C_{18}H_{35}O_2)_2$	The stabilizers used for vinyl chloride
Other cadmium compounds			

• Lead and lead compounds

1. Examples: All substances containing lead or lead compounds

Name	CAS No.	Chemical formula	Main purposes
Lead; metal	7439-92-1	Pb	
Lead / Tin alloy		Pb-Sn	Solder, brazing materials, and electrical connection
Lead (II) oxide	1317-36-8	PbO	Pigments, rubber valcanization accelerators, and solid lubricants
Lead (IV) oxide	1309-60-0	PbO_2	Lead-acid batteries, rubber curing agents, and materials for pigments
Dilead trioxide	–	Pb_2O_3	
Lead (II, IV) oxide	1314-41-6	Pb_3O_4	Pigments, lead-acid batteries, glass, and paints
Lead azide	13424-46-9	PbN_6	
Lead (II) fluoride	7783-46-2	PbF_2	Special optical glass, pigments
Lead (II) chloride	7758-95-4	$PbCl_2$	
Lead (IV) chloride	13463-30-4	$PbCl_4$	
Lead (II) iodide	10101-63-0	PbI_2	Bronze, printing, and photographs
Lead (II) sulfide	1314-87-0	PbS	Infrared ray detectors in which semiconductor elements are utilized
Lead (II) cyanide	592-05-2	$Pb(CN)_2$	Antirust pigments
Lead fluoroborate	13814-96-5	$Pb(BF_4)_2$	Plating bath, anticorrosive surface treatment
Lead fluosilicate	25808-74-6	$PbSiF_6$	Plating bath, lead refinement
Lead nitrate	10099-74-8	$Pb(NO_3)_2$	Optical glass
Lead carbonate	598-63-0	$PbCO_3$	
Lead hydroxycarbonate	1344-36-1	$(PbCO_3)_2Pb(OH)_2$	Pigments, vinyl chloride stabilizers
Lead perchlorate	13637-76-8	$Pb(ClO_4)_2$	
Lead (II) sulfate	7446-14-2 15739-80-7	$PbSO_4$	Pigments, rubber compounding ingredients, vinyl chloride stabilizers, and batteries
Lead oxide sulfate	12202-17-4	Pb_4SO_7	Pigments
Lead (II) phosphate	7446-27-7	$Pb_3(PO_4)_2$	Stabilizers for plastics
Lead thiocyanate	592-87-0	$Pb(SCN)_2$	Stain, matches
Lead (II) acetate, trihydrate	6080-56-4	$Pb(CH_3COO)_2 \cdot 3H_2O$	
Lead (II) acetate	301-04-2	$Pb(CH_3COO)_2$	
Lead (IV) acetate	546-67-8	$Pb(CH_3COO)_4$	

Name	CAS No.	Chemical formula	Main purposes
Lead oleate	1120-46-3	$Pb[CH_3(CH_2)_7CH=CH(CH_2)_7COO]_2$	Lubricants, curing agents, etc.
Lead stearate	7428-48-0	$Pb(C_{17}H_{35}COO)_2$	Lubricants, stabilizers for vinyl chloride
Lead (II) metaborate	10214-39-8	$Pb(BO_2)_2 \cdot H_2O$	Desiccants for paints
Lead metasilicate	11120-22-2; 10099-76-0	$PbSiO_3$	Ceramics
Lead antimonite	13510-89-9	$Pb_3(SbO_4)_2$	Pigments, coloring agents for glass
Lead arsenate (1:1)	7784-40-9	$PbHAsO_4$	
Lead (II) arsenite	10031-13-7	$Pb(AsO_2)_2$	Pesticides
Lead chromate; chrome yellow	1344-37-2	$PbCrO_4$	Pigments, paints, and inks
Lead molybdate	10190-55-3	$PbMoO_4$	Pigments
Calcium plumbate	12013-69-3	Ca_2PbO_4	Oxidizers
Tetramethyl lead	75-74-1	$Pb(CH_3)_4$	
Tetraethyl lead	78-00-2	$Pb(C_2H_5)_4$	
Other lead compounds and alloys			

• Mercury and mercury compounds

1. Examples: All substances containing mercury or mercury compounds

Name	CAS No.	Chemical formula	Main purposes
Mercury	7439-97-6	Hg	Electrodes, mercury lamps
Mercury alloys; amalgam			
Mercury (I) oxide	15829-53-5	Hg_2O	
Mercury (II) oxide	21908-53-2	HgO	Mercury cells, preservatives
Mercury (I) chloride	10112-91-1	Hg_2Cl_2	Electrodes, pigments
Mercury (II) chloride	7487-94-7	$HgCl_2$	Metal etching, batteries, and preservatives
Mercury (II) nitrate	10045-94-0	$Hg(NO_3)_2$	Felt, catalysts
Mercury (I) sulfate		Hg_2SO_4	Batteries
Mercury (II) fulminate	628-86-4	$Hg(ONC)_2$	
Mercury (II) acetate	1600-27-7	$Hg(CH_3COO)_2$	
Methylmercury salts	e.g. 22967-92-6	CH_3HgX; X=Cl, Br, I, OH, etc.	Fungicides
Ethymercury salts		C_2H_5HgX; X=Cl, Br, I, OH, etc.	Preservatives, disinfectants
Propylmercury salts		C_3H_7HgX; X=Cl, Br, I, OH, etc.	
Phenylmercury salts		C_6H_5HgX; X=Cl, Br, I, OH, etc.	Preservatives, disinfectants
Methoxyethyl-mercury salts		$CH_3OC_2H_4HgX$; X=Cl, Br, I, OH, etc.	Disinfectants, fungicides
Dialkylmercury		R_2Hg; R=alkyl group (C_nH_{2n+1})	
Diphenylmercury	587-85-9	$(C_6H_5)_2Hg$	
Other mercury compounds			

• Hexavalent chromium compounds

1. Examples: Only the substances containing hexavalent chromium compounds
   Thus, metallic chrome, chrome alloys, chrome plating, and trivalent-chromium compounds do not fall under this category.

Name	CAS No.	Chemical formula	Main purposes
Chromium (VI) oxide; Chromium trioxide	1333-82-0	CrO_3	Pigments, catalysts, plating, and tanning
Lithium chromate	14307-35-8	Li_2CrO_4	Corrosion prevention
Sodium chromate	7775-11-3	Na_2CrO_4	Antirust, tanning
Potassium chromate	7789-00-6	K_2CrO_4	Pigments, inks, and tanning
Patassium chlorochromate	16037-50-6	$K[CrO_3Cl]$	
Ammonium chromate	7788-98-9	$(NH_4)_2CrO_4$	Photographs, catalysts
Copper chromate	13548-42-0	$CuCrO_4$	Mordants
Magnesium chromate	13423-61-5	$MgCrO_4$	Antirust, surface treatment
Calcium chromate	13765-19-0	$CaCrO_4$	Pigments, inks, and tanning
Strontium chromate	7789-06-2	$SrCrO_4$	Pigments, antirust
Barium chromate	10294-40-3	$BaCrO_4$	Pigments, corrosion prevention, and coloring agents for ceramics
Lead chromate; Chrome yellow	1344-37-2	$PbCrO_4$	Pigments, paints, and inks
Zinc chromate	12018-19-8; 13530-65-9; 14018-95-2	$ZnCrO_4$	Pigments, anticorrosives
Sodium dichromate; Sodium bichromate	10588-01-9	$Na_2Cr_2O_7$	Pigments, photographs, tanning, and corrosion prevention
Potassium dichromate; Potassium bichromate	7778-50-9	$K_2Cr_2O_7$	Pigments, photographs, batteries, plating, and tanning
Ammonium dichromate; Ammonium bichromate	7789-09-5	$(NH_4)_2Cr_2O_7$	Pigments, photographs, and catalysts
Calcium dichromate; Calcium bichromate	14307-33-6	$CaCr_2O_7$	Catalysts, corrosion prevention
Zinc dichromate; Zinc bichromate		$ZnCr_2O_7$	Pigments
Other hexavalent chromium compounds			

• Polychlorinated biphenyls (PCB), polychlorinated naphthalenes (PCN), polychlorinated terphenyls (PCT)

1. Examples

Name	CAS No.	Chemical formula	Main purposes
PCB; Polychlorinated biphenyls	1336-36-3	$C_{12}H_{10-x}Cl_x$ (x =1 – 10)	Lubricants, heating mediums, and oils for capacitors
PCN; Polycholorinated naphthalenes		$C_{10}H_{8-x}Cl_x$ (x ≧3)	Lubricants, preservatives, and paints
Trichloronaphthalenes	1321-65-9	$C_{10}H_5Cl_3$	
Tetrachloronaphthalenes	1335-88-2	$C_{10}H_4Cl_4$	
Pentachloronaphthalenes	1321-64-8	$C_{10}H_3Cl_5$	
Octachloronaphthalenes	2234-13-1	$C_{10}Cl_8$	
PCT; Polychlorinated terphenyls	61788-33-8	$C_{18}H_{14-x}Cl_x$ (x=1-14)	Lubricants, preservatives, and paints

• Chlorinated paraffins (CP)

1. Examples

Name	CAS No.	Chemical formula	Main purposes
Short-chain Chlorinated paraffins C10-13, Cl ≥ 48 wt%	e.g. 85535-84-8	–	Plasticizers, flame retardants

• Polybrominated biphenyls (PBB)

1. Examples

Name	CAS No.	Chemical formula	Main purposes
Polybrominated biphenyls; PBB	e.g. 67774-32-7	$C_{12}H_{10-x}Br_x$ (x = 1 – 10)	Flame retardants

• Polybrominated diphenylethers (PBDE)

1. Examples

Name	CAS No.	Chemical formula	Main purposes
Polybromodiphenyl ether; Polybromodiphenyloxide; Polybrominated biphenyl ethers; PBDE; PBDO; PBBE		C12H10-xBrxO (x =1-10)	Flame retardants
Decabromodiphenyl ether; Decabromodiphenyloxide; DBDE; DecaBDE; DBDPE; DBDPO	1163-19-5	C12Br10O	Flame retardants (for PE, ABS, and polyester)
Octabromodiphenyl ether; Octabromodiphenyloxide; OBDE; OctaBDE	32536-52-0	C12H2Br8O	Flame retardants (for ABS, HIPS, and LDPE)
Hexabromodiphenyl ether; Hexabromodiphenyloxide	36483-60-0	C12H4Br6O	Flame retardants
Pentabromodiphenylehter; Pentabromodiphenyloxide; PentaBDE	32534-81-9	C12H5Br5O	Flame retardants

• Tributyltin compounds and triphenyltin compounds

1. Examples: Only tributyltin compounds and triphenyltin compounds
   Therefore, dibutyl or diphenyl compounds do not fall under this category. Metal tin, tin alloys, tin plating, and tin inorganic compounds do not fall under this category, either.
   Examples are written in the table below.

Name	CAS No.	Chemical formula	Main purposes
Tributyltin bromide	1461-23-0	$(C_4H_9)_3SnBr$	Disinfectants
Tributyltin oxide; Bis (tributyltin) oxide; Distannoxane, hexabutyl-	56-35-9	$C_{24}H_{54}OSn_2$	Disinfectants
Triphenyl tin	668-34-8	$(C_6H_5)_3Sn$	Disinfectants
Triphenyltin chloride; Fentin chloride; Stannane, chlorotriphenyl-	639-58-7	$(C_6H_5)_3SnCl$	Disinfectants
Triphenyltin hydroxide; Fentin hydroxide; Stannane, hydroxytriphenyl-	76-87-9	$(C_6H_5)_3SnOH$	Disinfectants
Triphenyltin N, N' –dimethyldithiocarbamate; Stannane, [[(dimethylamino) thiomethyl] thio] triphenyl-	1803-12-9	$(C_6H_5)_3Sn(CH_3)_2NCS_2$	
Triphenyltin fluorid; Fentin fluoride	379-52-2	$(C_6H_5)_3SnF$	
Triphenyltin acetate; Fentin acetate; Stannane, (acetyloxy) triphenyl-	900-95-8	$(C_6H_5)_3SnOCOCH_3$	
Triphenyltin fatty acid salts Note: The triphenyltin fatty acid salts specified here are limited to those with a 9-, 10-, or 11-carbon chain.	18380-71-7 18380-72-8 47672-31-1 94850-90-5		

Name	CAS No.	Chemical formula	Main purposes
Triphenyltin chloroacetate; (chloroacetoxy) triphenylstannane	7094-94-2	$(C_6H_5)_3SnOCOCH_2Cl$	
Tributyltin methacrylate; Tributyl (methacryloyloxy) stannane; Stannane, tributyl [(2-methyl-1-oxo-2-propenyl) oxy]-	2155-70-6	$(C_4H_9)_3SnC_4H_5O_2$	
Bis (tributyltin) fumarate	6454-35-9 24291-45-0	$C_2H_2(COO)_2$ $([C_4H_9]_3Sn)_2$	
Tributyltin fluoride	1983-10-4 7304-48-5	$(C_4H_9)_3SnF$	
Bis (tributyltin) 2, 3-dibromosuccinate	31732-71-5 56323-17-2	$([C_4H_9]_3Sn)_2C_2H_2$ $(BR)_2(COO)_2$	
Tributyltin acetate	56-36-0	$(C_4H_9)_3SnOCOCH_3$	
Tributyltin laurate; Tributyl (lauroyloxy) stannane	3090-36-6	$(C_4H_9)_3SnC_{12}H_{23}O_2$	
Bis (tributyltin) phthalate; [(Phthaloylbis (oxy)] bis (tributylstannane)	4782-29-0	$(C_6H_4)(COO)_2$ $([C_4H_9]_3Sn)_2$	
Tributyltin sulfamate; Stannane, [(aminosulfonyl) oxy] tributyl-	6517-25-5	$(C_4H_9)_3SnSO_3NH_2$	
Bis (tributyltin) maleate	14275-57-1 24291-45-0	$C_{28}H_{56}O_4Sn_2$	
Tributyltin chloride; Tributylchlorostannane; Stannane, tributylchloro-	1461-22-9 7342-38-3	$(C_4H_9)_3SnCl$	

Name	CAS No.	Chemical formula	Main purposes
Mixture of tributyltin cyclopentanecarboxylate and its analogs; Stannane, tributyl-, mono (naphthenoyloxy) derivs.; Tributyltin naphthenate	85409-17-2		
[1R-(1alpha,4a.beta.,4b.alpha.,10a.alpha.)]-tributyl [[[1,2,3,4,4a,4b,5,6,10,10a-decahydro-7-isopropyl-1,4a-dimethyl-1-phenanthryl]carbonyl] oxy] stannane	26239-64-5	$C_{32}H_{56}O_2Sn$	
Octyl acrylate-methyl methacrylate-tributyltin methacrylate copolymer (alkyl; C = 8)	67772-01-4		

• Asbestos

1. Examples

Name	CAS No.	Chemical formula	Main purposes
Asbestos	1332-21-4; 132207-32-0; 132207-33-1		Insulators, fillers
Crocidolite	12001-28-4	$Na_2Fe_5(Si_8O_{22})(OH)_2$	Insulators, fillers
Chrysotile	12001-29-5	$Mg_3Si_2O_5(OH)_4$	Insulators, fillers
Amosite	12172-73-5	$(Mg, Fe)_7Si_8O_{22}(OH)_2$	Insulators, fillers
Anthophyllite	77536-67-5	$(Mg, Fe)_7Si_8O_{22}(OH)_2$	Insulators, fillers
Tremolite	77536-68-6	$Ca_2Mg_5Si_8O_{22}(OH)_2$	Insulators, fillers
Actinolite	77536-66-4	$Ca_2(Mg, Fe)_5Si_8O_{22}(OH)_2$	Insulators, fillers

• Formaldehyde

1. Examples

Name	CAS No.	Chemical formula	Main purposes
Formaldehyde; formalin; formic aldehyde; formol	50-00-0	HCHO	Preservatives, monomer (e.g. phenol resin and melamine resin)

• PVC and PVC blends

1. Examples

Name	CAS No.	Chemical formula	Main purposes
PVC and PVC blends; Polivinylchloride and polivinylchloride blends	e.g. 9002-86-2		Vinyl chloride resin

EXPLANATORY NOTES
SS-00259-1
MANAGEMENT REGULATIONS FOR THE ENVIRONMENT-RELATED SUBSTANCES TO BE CONTROLLED WHICH ARE INCLUDED IN PARTS AND MATERIALS
FOURTH EDITION

In the past year since the issue of the third edition of SS-00259-1, statutes pertaining to the practice of environmental production have been changed worldwide. This fourth edition of SS-00259-1 has been issued to satisfy the requirements of changed statutes and to clarify the contents, which might have been unclear for readers.

1. “PURPOSE”

In accordance with current requirements on the market worldwide, the “substances to be reduced” become the “excluded substances,” which means those are excluded from the substances to be banned (‘Controlled Substances’) defined in the third edition of SS-00259-1.

2. “SCOPE”

2.1 Scope applicable to products, and Scope applicable to parts and materials

In order of the level of importance, the sub-clauses of “2.1 Scope applicable to products” and “2.2 Scope applicable to parts and materials” are reversed with “2.1 Scope applicable to parts and materials” and “2.2 Scope applicable to products.”

2.2 Scope applicable to parts and materials: “repair parts”

The “repair parts” is defined as the “repair parts for products on the market” in accordance with the definition in other documents related to this Standard.

3. “TERMS AND DEFINITIONS”

3.1 Management standards: “Level 3”

Management criteria for the Level 3 substances are updated in an attempt to further reinforce controls as follows:
“No deadline for banning the use is currently set for the substances classified into this level. They shall be classified into Level 2 to be banned in phases, depending on the availability of alternative parts and materials that satisfy the intended application.”

3.2 Management standards: “Exemption”

The Levels 1 to 3 are used to specify the ‘Controlled Substances,’ and some of them that had been classified into one of those in the third edition of SS-00259-1 are classified as “Exemption” as explained in the following:
“The substances classified into this level are those not regulated by the law or excluded from the ‘Controlled Substances’ due to insufficient supply of adequate alternative parts and materials that satisfy the intended application.”

4. “ENVIRONMENT-RELATED SUBSTANCES TO BE CONTROLLED (‘CONTROLLED SUBSTANCES’)”

4.1 Table 4.1 List of “Environment-related Substances to be Controlled (‘Controlled Substances’)”

The polychlorinated naphthalenes (PCN) is classified into the chlorinated organic compounds, and the polychlorinated terphenyls (PCT) is added to it as a new substance.

In the organic tin compounds, the ‘Controlled Substances’ are no other than tributyl tin compounds and triphenyl tin compounds, and therefore the wording of “organic tin compounds” is deleted.

As not all of the azo compounds are subject of the ‘Controlled Substances,’ the wording of “azo compounds” is replaced with the “specific azo compounds.” Details are provided in Table 4.2.

4.2 Cadmium and cadmium compounds

With the aim of making the reference tables clearer, descriptions of batteries by substance are consolidated into Table 4.4.

The following substances, which had been classified into Level 2, become Level 1 to be immediately banned:

- “Switches, relays, breakers, DC motors, and other electrical contact points”
- “Fuse elements of temperature fuses”
- “Glass, and the pigments as well as dyes of glass paints (paints for glass and the pigments as well as dyes used for glass)”
  Note: The glass includes adhesives, resistor elements, glass frit, conductive pastes (silver or copper ones), and sealing materials.
- “Solder (whose cadmium concentration is more than 20 ppm)”
- “CdS-photocells and the phosphors contained in fluorescent display devices”
- “Resistor elements (glass frit)”

The following substances are newly classified into Level 2:

- “Parts composed of metals containing zinc (e.g. brass, zinc for die casting) whose cadmium concentration is more than 100 ppm”
  Note: The allowable concentrations of impurities in metal parts containing a large amount of zinc (e.g. brass and zinc for die casting) is up to 100 ppm regardless of how they are included in the metal parts because the use of recycled materials is increasing on the market and management of the allowable concentrations of less than 100 ppm is not practical at the moment.

The following substances, which had been classified into Level 3, are excluded from the ‘Controlled Substances’:

- “Cadmium and cadmium compounds in electrical contacts and cadmium plating of electrical contacts, for which high reliability is required and which has no alternative materials, for which high reliability is required and which has no alternative materials”
- “Optical glass, filter glass”

The note on the pre-conditioning is partly revised to stress the importance of implementing the pre-conditioning methods in line with the note as in the following:
“In the process of preconditioning, precipitates (insoluble matter) must be totally dissolved by some means (e.g. alkali fusion).”

As the elution methods, which are inapplicable to the pre-conditioning methods prescribed in this Standard, ASTM F963-96a and ISO 8124-3 are added to the notes on the measurement methods.

4.3 Lead and lead compounds

With the aim of making the reference tables clearer, descriptions of batteries by substance are consolidated into Table 4.4.

The following substances, which had been classified into Level 2, become Level 1 to be immediately banned:

- "Surface coatings for the external electrodes, lead wires, etc. of the parts contained in AC adaptors, remote controllers, semiconductor devices, etc."
- "Of the types of leaded solder, those that satisfy both of the following conditions: (1) leaded solder that contains less than 85 wt% of lead; and (2) leaded solder whose lead concentration is more than 1000 ppm"
- "All kinds of alloys (including solder materials) whose individual lead/lead compound concentration exceeds the regulated allowable concentration"
- "Stabilizers, pigments, and dyes contained in the plastic (including rubber) materials that are used for areas (excluding outer and exposed ones) of the following articles: mice, devices, AC adaptors, connection cords, remote controllers, and power supply cords"
- "Paints and inks used for areas other than the outer and exposed ones of devices"

The following substances, which had been classified into Level 3, are excluded from the 'Controlled Substances':

- "High-melting point solder for internal connections used for parts and devices (the leaded solder whose lead content is 85 wt% or more)"
- "Electronic ceramic parts (e.g. piezoelectric materials, dielectric ones, and magnetic ones [ferrites])"
- "Optical glass, filter glass"
- "Glass materials used for electrical parts, cathode-ray tubes, or vacuum fluorescent displays (The Glass materials include adhesives, resistor elements, glass frit, conductive pastes [silver or copper ones], and sealing materials)"
- "Allowable concentration of lead as an additive in the following alloys(*1)"

(*1)	Type of alloy	Allowable content of lead
	Steel	Up to 0.35 wt%
	Aluminum alloys	Up to 0.4 wt%
	Copper alloys (including brass and phosphor bronze)	Up to 4 wt%
	Solder	Up to 1000 ppm

The wording of "less than" used to specify the allowable content of lead and lead compounds is changed to "up to" in compliance with relevant statutes.

The "solder pastes used under C4 (Controlled Collapse Chip Connection) bumps," specified in the third edition, is amended to "solder to complete a viable electrical connection between semiconductor die and carrier within integrated circuit Flip Chip packages," according to relevant statues, and "solder consisting of more than two elements for the connection between the pins and the package of microprocessors with a lead content of more than 80% and less than 85% by weight", is added.

The note on the pre-conditioning is partly revised to stress the importance of implementing the pre-conditioning methods in line with the note as in the following:
"In the process of preconditioning, precipitates (insoluble matter) must be totally dissolved by some means (e.g. alkali fusion)."

As the elution methods, which are inapplicable to the pre-conditioning methods prescribed in this Standard, ASTM F963-96a and ISO 8124-3 are added to the notes on the measurement methods. EN 1122, which must not be used in the pre-conditioning methods for lead, is also added to the notes since it may result in inaccurate measured values due to lead sulfate precipitates.

4.4 Mercury and mercury compounds

With the aim of making the reference tables clearer, descriptions of batteries by substance are consolidated into Table 4.4.

The following substances, which had been classified into Level 2, become Level 1 to be immediately banned:
- "Small-sized fluorescent lamps whose mercury content (per lamp) is 5 mg or more"
- "Straight-tube fluorescent lamps whose mercury content (per lamp) is 5 mg or more"
- "Mercury and mercury compounds except those classified as Exemption"

The following substances, which had been classified into Level 3, are excluded from the 'Controlled Substances':
- "Lamps other than small-sized fluorescent ones and straight-tube ones (e.g. high-pressure mercury lamps)"
- "Small-sized fluorescent lamps whose mercury content (per lamp) is less than 5 mg"
- "Straight-tube fluorescent lamps whose mercury content (per lamp) is less than 5 mg"

4.5 Hexavalent chromium compounds

The "tanning" is deleted from the targets of the 'Controlled Substances' because leather end products had been evaluated by the elution methods of hexavalent chromium, specified in this Standard, and the results showed no elution.

The following substances , which had been classified into Level 2, become Level 1 to be immediately banned:
- Hexavalent chromium compounds used for "all purposes (e.g. those [1] contained in inks and paints as components of their pigments, and [2] applied for preventing rust on surfaces of plating [on screws, steel plates, etc.])"

4.6 Chlorinated organic compounds

The polychlorinated naphthalenes (PCN) is classified into the chlorinated organic compounds, and the polychlorinated terphenyls (PCT) is added to it as a new substance.

In compliance with the regulation enforced in the Netherlands, the Cl of the chlorinated paraffins (CP) is reduced from "50 wt% or more" to "48 wt% or more."

4.7 Brominated organic compounds

The following polybrominated diphenylethers (PBDE), which had been classified into Level 2, become Level 1 to be immediately banned:
- "Parts made by the dies that were made in December 2002 or earlier (Applicable only to the bodies of the displays and TV sets shipped to countries other than European ones)"
- "Parts whose molding dies have been made since January 2003 must not contain PBDE"

4.8 Tributyl tin compounds and triphenyl tin compounds

In the organic tin compounds, the 'Controlled Substances' are no other than tributyl tin compounds and triphenyl tin compounds, and therefore the wording of "organic tin compounds" is deleted.

4.9 Azo compounds

As not all of the azo compounds are subject to the 'Controlled Substances,' the wording of "azo compounds" is replaced with the "specific azo compounds." To further clarify the azo compounds classified into Level 3, the following note is added:

"The specific azo compounds may produce amines specified in Table 4.2a when they are decomposed on the basis of a test method specified in Germany Law for Foods and Consumer Products."

4.10 Polyvinyl chloride (PVC) and PVC blends

Because of insufficient supply of adequate alternative parts and materials to the polyvinyl chloride (PVC) and PVC blends on the market, PVC and PVC blends categorized as the ‘Controlled Substances’ in the third edition have been reviewed and updated on a product basis. The products comprised of PVC and PVC blends are to be banned according to the availability of alternatives as specified in the letter with document number of QAR-04-006, as follows:

The following substances are classified into Level 1 to be immediately banned:
- “Sheets used as packaging materials (e.g. air cushions, blister packs, and protective bags)”
- “Packaging materials to be packaged together with the product, such as remote controllers and cables (e.g. bags, tapes, cartons, blister packs)”
- “Vinyl ties made of PVC and PVC blends”

The following substances are classified into Level 2 with target dates for banning the use:
Note: Sony will not accept any of the following substances, which will become a component of an existing or new Sony product on and after the designated target dates.
- “Heat shrink tubes”
- “Sheets and laminates used for the exterior of wooden products (e.g. laminates for wooden cabinets and wooden speakers)”

The following substances are classified into Level 2 with target dates for banning the use:
Note: Sony will not accept any of the following substances, which will become a component of a new Sony product that is to be in commercial mass production on and after the designated target dates.

- “Parts consisting of wires (e.g. connectors with cords) and wires used for internal wiring (e.g. motor leads)”
- “Power supply cords, including plugs, connectors, or cord bushes (2P/3P [Electrical Appliances and Material Safety Law])”
- “Coating for insulation and protection used for the inside and outside of devices, insulated tubes, insulated boards, decorative panels, labels, carrying belts, spacers, holders, covers, ducts, etc.”
- “Connection cords (1): those for wearable equipment (e.g. cables for ear phones, head phones, ear microphones)”
- “Connection cords (2): those for USB, iLink, RCA, AC adaptors secondary leads, multi cables, speaker cords”
- “Harnesses and processing wires designed by Sony (e.g. coaxial cables, flat wires, double insulation wires, shielded wires)”

The following substances are classified into Level 3:
- “Power supply cords, including plugs, connectors, or cord bushes (2P/3P [U/C])”
- “Developing papers”
- “Insulation caps for capacitors, power supply switches, and fuses”
- “Trays, magazine sticks, reels, embossed carrier tapes used by parts suppliers for parts packaging”

The following substances, which had been classified into Level 3, are excluded from the ‘Controlled Substances’:
- “Binders made of resin”
- “Polyvinyl electrical wires for high voltage”
- “Insulating tapes”
- “Speaker grilles”
- “Power supply cords for import into EU countries”
- “Parts, which are not classified into Level 1, 2, or 3, and use the blends made from vinyl chloride copolymers or polyvinyl chloride and from other polymers”

The following substances are particularly classified as Exemption due to the unavailability of appropriate alternative technology:
- “Transformer leads of which the joint is fixed by varnish impregnation”
- “Curl cords”
- “Extra fine electrical wires that are AWG (American Wire Gauge) 36 or more”
- “Use of PVC and PVC blends in the professional-use cables, to which general-purpose ones cannot be applied (e.g. cables for broadcast cameras and microphones)”

4.11 Additional rules for packaging materials containing heavy metals

The measurement methods are further clarified.
Packaging materials are defined based on specific products to clarify them in an easy-to-understand manner.

4.12 Additional rules for batteries

With the aim of making the reference tables clearer, descriptions of batteries by substance (cadmium, lead, and mercury) are consolidated into Table 4.4.

The following substances, which had been classified into Level 3, are excluded from the 'Controlled Substances':

- Lead used in the "batteries (excluding small-size sealed lead-acid ones) and battery packs whose lead content, in proportion to the total weight of each one, is less than 0.4%. However, the leaded solder and lead used for plastics (including rubber), paints, and inks for battery packs, which are classified into Level 1, are subject to the corresponding regulations"
- Mercury used in the "coin cell batteries whose mercury content, in proportion to the total weight of each one, is less than 2%" and "batteries (excluding coin cell ones) and battery packs whose mercury content, in proportion to the total weight of each one, is less than 0.0005%"

4.13 Update on 'Controlled Substances'

In the fourth edition of SS-00259-1, no substance other than the polychlorinated terphenyls (PCT) is added to the 'Controlled Substance.' Other substances, which had been studied to evaluate whether to be newly classified as the 'Controlled Substances,' are not included in this fourth edition, because they have no possibility to be used in Sony products in the future.

EXPLANATORY NOTES
SS-00259
MANAGEMENT REGULATIONS FOR THE ENVIRONMENT-RELATED SUBSTANCES TO BE CONTROLLED WHICH ARE INCLUDED IN PARTS AND MATERIALS
THIRD EDITION

One year has passed since the issue of the 2nd edition. This edition, the 3rd one, contains descriptions derived from the following matters that have changed during this one-year: Environment-related laws in various countries and environmental activities in various areas/organizations. The 3rd edition also specifies the contents to which requests/comments have been made during the same period.
Besides, we have checked if contents of PART 0 require revisions.
Our conclusion is that no revisions are necessary; therefore the contents of PART 0 in the 2nd edition will continuously be valid.

1. SCOPE APPLICABLE TO PARTS AND MATERIALS

A description, “Repair parts (Sony will later issue a notice describing how to handle some of them),” is newly written because special rules are provided for some repair parts that fulfill the following conditions: Those which Sony has already received and for which materials and dyes cannot be changed.

2. “TERMS AND DEFINITIONS”

2.1 Level 3--A management standard

To clarify the definition of Level 3, the following explanation is newly provided: “After Sony judges that alternative parts or materials are available for them (= the substances and purposes classified at Level 3), or that they can be used thanks to alternative technologies, Sony will actively introduce and use the substances and the purposes.”

2.2 Plastics defined in SS-00259

The 2nd edition did not clearly define the range of plastics. The 3rd edition defines it as “Materials and raw materials composed of synthetic high-molecular polymers” and describes examples such as resins, films, adhesives, adhesive tapes, molded products, products made of synthetic rubber, and plastics made from raw materials of plant origin.

3. “ENVIRONMENT-RELATED SUBSTANCES TO BE CONTROLLED (‘THE CONTROLLED SUBSTANCES’)”

3.1 Cadmium and cadmium compounds

To clearly define the range of cadmium and cadmium compounds, the explanation below is newly provided for “Surface treatment (e.g. plating), coating” in the Level 1 column.
“However, the plating of electrical contacts, for which high reliability is required and which has no alternative materials, does not fall under the above categories.”
The Level 1 column now contains “The Nickel and NiCd batteries that are received as new parts,” which used to be classified at Level 2, because of EU Battery Directive and because “April 1, 2003,” the date which was specified in the 2nd edition and on or after which Sony wouldn’t receive the targets, has already passed.
In this regard, “The month in or after which Sony won’t receive the targets” for “All Nickel and NiCd batteries” is changed from “in or after January 2005” to “in or after January 2007.”
The Level 3 column now contains new targets--optical glass and filter glass--because it is difficult to establish technologies for developing materials that will replace them.
To clarify the targets whose cadmium content must be measured, the following description is provided: “Allowable concentration: Less than 5 ppm for plastics [including rubber], paints, and inks.”

3.2 Lead and lead compounds

To comply with EU Battery Directive, we now, in the Level 1 column, specify new targets: "The batteries (excluding small-size sealed acid-ones) and battery packs whose lead content, in proportion to the total weight of each one, is 0.4% or more."

To clarify the target areas classified at Level 2, the following descriptions are provided:

1) The paints and inks used for outer and exposed areas of devices (effective on or after April 1, 2004); and
2) The paints and inks used for areas other than the outer and exposed ones of devices (effective on or after January 1, 2005).

The descriptions below that are provided in the Level 3 column explain the materials, parts, and products for which technologies for developing substitutes are not readily available.

1) Electronic ceramic parts (e.g. piezoelectric materials, dielectric ones, and magnetic ones [ferrites])
2) Optical glass, filter glass
3) Stabilizers used for electroless gold plating as well as electroless Nickel plating and lead contained in additives
4) Solder paste used under C4 (Controlled Collapse Chip Connection) bumps
5) The batteries (excluding small-size sealed lead-acid ones) and battery packs whose lead content, in proportion to the total weight of each one, is less than 0.4%

However, both leaded solder and the lead used for plastics (including rubber), paints, and inks which are classified at Level 1 or 2 are subject to the corresponding regulations.

A supplementary explanation, "including brass and phosphor bronze," is provided in the column for copper alloys.

To clarify the targets whose lead content must be measured, the following description is provided: "Allowable concentration: Less than 100 ppm for plastics (including rubber), paints, and inks."

The "Standard for measurement" column now contains new examples of pre-conditioning methods.

3.3 Mercury and mercury compounds

To comply with China regulations on batteries, we now, in the Level 1 column, specify the following new targets:

1) Coin cell batteries whose mercury content, in proportion to the total weight of each one, is 2% or more; and
2) The batteries (excluding coin cell ones) and battery packs whose lead content, in proportion to the total weight of each one, is 0.0005% or more.

The mercury contents of batteries must be equal to or less than the above-mentioned ones, depending on battery types.

To comply with the latest regulations specified in EU RoHS, the mercury content of a straight-tube fluorescent lamp, in the Level 2 column, has been changed from "10 to 20 mg" to "5 mg or more." Similarly, the mercury content of the same type of lamp, in the Level 3 column, has been changed from "less than 10 mg" to "less than 5 mg."
Besides, the Level 3 column now contains the following targets:

1) Coin cell batteries whose mercury content, in proportion to the total weight of each one, is less than 2%; and
2) The batteries (excluding coin cell ones) and battery packs whose lead content, in proportion to the total weight of each one, is 0.0005% or more.

To comply with China regulations on batteries, "Silver oxide cells, alkaline-manganese cells, and air cells," specified in the 2nd edition, are no longer described in the Level 2 column.

3.4 Hexavalent chromium compounds

To clarify the targets that must not contain hexavalent chromium compounds, the following explanation is newly provided: "Metal chromium and chromium contained in alloys are excluded from the targets."
Batteries and catalysts that used to be classified at Level 1 are no longer described because they do not contain the compounds any more.

3.5 Chlorinated organic compounds

"Mirex (Perchlordecone)" is no longer described because it is difficult to obtain the substance in Japan and North America, and because the substance has not been used as a flame retardant.

3.6 Brominated organic compounds

Tetrabromobisphenol-A-bis-(2, 3-dibromopropylether) (Product name: FR-720, etc.) is now grouped as one of "Other brominated organic compounds" and classified at Level 3 because Dutch laws banning the manufacture and sales of FR-720, etc. no longer exist.

3.7 Formaldehyde

In the 2nd edition, "chipboard" was used for one of the targets. However, in the 3rd edition, general terms--fiberboard and particleboard--are used instead.

In the 2nd edition, two measurement methods--A chamber method specified in EN 717-1 and a perforator method specified in EN 120--were specified. This was based on investigations on laws and industry standards in various areas and countries.

The 3rd edition now describes a desiccator method specified in JIS and JAS standards in Japan.
By considering the difference in value between formaldehyde-emission contents detected by the above desiccator method and those detected by chamber methods, we now specify F☆☆☆ as the standard formaldehyde-emission content derived from the desiccator method based on JIS A5905 and A5908.

3.8 Polyvinyl chloride (PVC) and PVC blends

To clarify the meaning of "sheets" described in the Level 2 column in the 2nd edition, the word is changed to "Sheets used as packaging materials (e.g. air cushions, blister packs, and Miramat [protective bags])."
For the same purpose, two types of descriptions are provided in the Level 2 and 3 columns respectively:
1) The insulation plates, tubes, and caps used for the outside of devices; and
2) The insulation plates, tubes, and caps employed in devices.

3.9 Regulations on heavy metals contained in packaging materials

Regarding all raw materials used for packaging materials, standards for each Controlled Substance must be satisfied. Furthermore, it is a must to keep rules for the four heavy metals--mercury, cadmium, lead, and hexavalent chromium.

One of the rules specifies the total concentration of the four heavy metals. In connection with this matter, plastics (including rubber), paints, and inks are subject to the following rules:
A) "Less than 5 ppm" is determined as the allowable cadmium-concentration in the above materials.
B) "Less than 100 ppm" is determined as the allowable lead-concentration in the materials. (The rule will become effective on or after April 1, 2004.)
C) "Less than 100 ppm" is determined as the allowable total-concentration of the four heavy metals in the materials.

The above rules, however, may lead to the following situations:
A) When the cadmium concentration and the lead one are 4- and 98 ppm respectively, rules 1) and 2) are satisfied.
B) The total concentration, 102 ppm, neither satisfies rule 3) nor fulfills the requirements of relevant laws.

Since the hexavalent-chromium concentration cannot be measured by the specified equipment, at first, measure the total chromium-concentration. If the derived value is 100 ppm or more, analyze the hexavalent chromium contained in the total chromium.

To clarify the targets whose four-heavy-metal contents must be measured, the following sentence is newly provided: "This rule does not apply to cartons for returnable boxes owned by part suppliers."

EXPLANATORY NOTES
SS-00259
MANAGEMENT REGULATIONS FOR THE ENVIRONMENT-RELATED SUBSTANCES TO BE CONTROLLED WHICH ARE CONTAINED IN PARTS AND MATERIALS
SECOND EDITION

It was not easy to understand the 1st edition issued in April 2002, because its contents were complicated. In order to comprehend the information on each environment-related substance and the in-house management-situations for the substance, its structure has been changed to indicate management levels according to each environment-related substance. In this 2nd edition, the contents and structure are wholly revised in order that the information contained in it is understood surely and easily.
In the 1st edition, in order to manage environment-related substances, they were classified as “Banned substances” or “Totally-abolished substances.” In the 2nd edition, management levels are set by the combination of one of “The Controlled Substances” and its purposes or a part where it is used. The combination is defined as a “Target”; this is a distinguished point of the 2nd edition.
After the issue of the 1st edition, investigations and discussions were held again on how to interpret the 1st edition, the actual situations in the industry, and inquiries and comments on relevant laws, in order to re-establish “Scope,” “The time to ban on receiving the parts and materials,” and the identification of environment-related substances. The PART 0 (GENERAL RULES) of SS-00259 used to be classified at “CLASS B (distributed only in Sony).” However, this revised version, the 2nd edition, is classified at “CLASS C” so that our business partners can further understand Sony’s view and a basic policy of this Standard.

1. “SCOPE”

“Scope applicable to products” is newly added; how to treat OEM products is clarified.
Thus, it has become clear that the regulations specified in SS-00259 do not apply to the production facilities and OA equipment used in Sony or Sony’s plants. Accessories (the accessories of electronic products, or subsidiary products), packaging materials, subsidiary parts and materials, etc. are concretely written in “Scope applicable to parts and materials.”

2. “TERMS AND DEFINITIONS”

1) In the 1st edition, environment-related substances are called and defined as “Banned substances” or “Totally-abolished substances” as a way to manage them; however there was confusion because some exceptions were made, and “Target deadlines for the total abolishment” of some “Intended purposes” were set at the end of March 2004. In the 2nd edition, as a way to control environment-related substances, a management method, in which “Targets (combinations of substances and their purposes or where substances are used)” are specified, is adopted. Terms for substances such as “banned” and “totally-abolished” are no longer used.
   In the 2nd edition, management standards are set for each substance to phase it out. In the later editions in the future, the same method is to be adopted.
2) The definitions of “Contained” and “Impurity” are newly added. Regarding the cadmium and lead contained in plastics, as written in this Standard, “less than 5 ppm” and “less than 100 ppm” are set respectively. When setting the values, the inclusions of the impurities are considered.
3) In the 1st edition, a term, “Target deadlines for the total abolishment,” was used to indicate the time to phase out the substances. In the 2nd edition, however, a term, “The time to ban on receiving the parts and materials,” is used because the conventional one is ambiguous.

3. "ENVIRONMENT-RELATED SUBSTANCES TO BE CONTROLLED ('THE CONTROLLED SUBSTANCES')"

3.1 Cadmium and cadmium compounds

The targets (where substances are used / their purposes) classified as "Immediately banned" are concretely written as much as possible. Regarding measurement standards, general "Pre-conditioning" and "Measurement method" are added.

"The time to ban on receiving the parts and materials" for the purposes classified at Level 2 (with the exception of NiCd batteries) is changed from "April 1, 2003" to "January 1, 2005."

Cadmium contained in metal parts (e.g. the ones whose main material is zinc) is regarded as an impurity. Therefore, their cadmium concentrations shall currently be disregarded.

"Less than 20 ppm" is set for the allowable concentration of cadmium impurities contained in solder, regardless of solder types.

Regarding cadmium contained in plastics, the laws of the Netherlands or other countries regulate the cadmium contents or ban its use (without setting any allowable concentrations of cadmium). Therefore, Sony has adopted a principle that it must not be contained, and takes strict controls of cadmium by measuring (or analyzing) its contents.

In the actual measurement, what is considered is the existence of the impurities that cannot be removed, with the existing industrial levels, in a process in which natural ingredients are refined to make raw materials. With the values sought by precise analysis methods such as ICP-AES, a value that is less than 5 ppm is regarded and set as an allowable concentration.

3.2 Lead and lead compounds

Regarding an allowable concentration of the lead and its compounds contained in plastics, less than 100 ppm is set as a standard. This is a value in which the contents of other metals and the lower detection limit of a measurement device are included. Pre-conditioning for lead and its compounds is the same as that for cadmium. Regarding the lead impurities contained in solder, "less than 1 000 ppm" is set as a standard. This rule will be applied on and after January 1, 2005. The solder that satisfies this condition can be used as lead-free solder. Regarding actual application methods such as management by measuring (or analyzing) lead / lead compound contents, Environment Quality Control, which is specially regulated by Quality Assurance Dept., Procurement Center, must be kept.

3.3 Mercury and mercury compounds

Regarding mercury and its compounds, allowable contents of mercury are set for small-sized fluorescent lamps and straight-tube fluorescent lamps. What are classified at Level 1 (immediately banned) are a small-sized fluorescent lamp whose mercury content is 10 mg or more and a straight-tube fluorescent lamp whose mercury content is 20 mg or more.

From now on, mercury contents shall gradually be reduced.

3.4 Chlorinated organic compounds

Mirex is newly added to this category. It is classified at Class 1 in "Law Concerning the Examination and Regulation of Manufacture, etc., of Chemical Substances (Japanese law)," and whose manufacture, sales, or use is banned. Its purposes are presumed to be those for flame retardants.

Regarding chlorinated paraffins (CP) among chlorinated organic compounds, short-chain chlorinated paraffins (chlorine content: 50% or more) are known to have effects on the environment. Therefore, their purposes are limited; they are classified at Level 1 (immediately banned).

(Refer to SS-00259 AMMENDMENT issued in August of 2002.)

Other purposes are classified at Level 3.

Chlorinated organic compounds except short-chain types are treated as "Other chlorinated organic compounds."

PCB (polychlorinated biphenyls) and PCN (polychlorinated naphthalenes) are classified at Level 1 because they are classified at Class 1 in "Law Concerning the Examination and Regulation of Manufacture, etc., of Chemical Substances (Japanese law)."

Among the chlorinated organic compounds that are not specified here, ones used for plasticizers or flame retardants are classified at Level 3 because their impacts on the environment are not clear.

3.5 Brominated organic compounds

Tetrabromobisphenol-A-bis-(2, 3-dibromopropylether) (Product name: FR-720, etc.) is newly added to this category because laws in the Netherlands ban its manufacture and sales.
By the way, it turned out that PBDE, which was classified as a banned substance in the 1st edition, was used for some products. After Sony investigated its effects on the environment and the relevant laws of each country, the following matters have been decided:
1) The purposes of PBDE shall be limited.
2) PBDE must not be used for new models.
3) The use of PBDE shall be phased out.
Thus, a management standard, Level 2, is newly set for brominated organic compounds.
The brominated organic compounds (flame retardants) that are not specified here are classified at Level 3 because their impacts on the environment are not clear.

3.6 Organic tin compounds

Tributyl tin compounds and triphenyl tin compounds are classified at Level 1 (Immediately banned) to comply with the revised Sony's Medium-term Environmental Action Program.

3.7 Azo compounds

A substance, 4-aminoazobenzene, is added as one of amines that must not be produced by the decomposition of azo compounds. LMBG 82.02.2 to 4, test methods to decompose azo compounds and then to extract amines, are added for reference (LMBG: German Law for Foods and Consumer Products).
To carry out these tests is costly and takes time because amines are examined after they are generated by the decomposition of azo compounds. Accordingly, the following matters are recommended:
1) Make sure that which color base (C.I. Pigment) is used.
2) Obtain information from the manufacturers or organizations that deal in pigments or dyes.

(Information on relevant organizations)
- JAPAN Bulk Pharmaceutical Manufacturers Association
- ETAD: Ecological and Toxicological Association of Dyes and Organic Pigments Manufacturers
* According to the test results carried out by ETAD, it is said that the azo-organic pigments written in the table below do not interfere with the 5th Amendment of German Law for Foods and Consumer Products.

C.I. Name	C.I. No.	CAS No.	Regulatory status
Pigment Yellow 12	21090	6358-85-6	A
Pigment Yellow 13	21100	5102-83-0	A
Pigment Yellow 14	21095	5468-75-7	A
Pigment Yellow 14	-	7621-06-9	A
Pigment Yellow 17	21105	4531-49-1	A
Pigment Yellow 55	21096	6358-37-8	A
Pigment Yellow 83	21108	5567-15-7	A
Pigment Yellow 126	21101	90268-23-8	A
Pigment Yellow 127	21102	68610-86-6	A
Pigment Yellow 174	21098	78952-72-4	A
Pigment Yellow 176	21103	90268-24-9	A
Pigment Orange 13	21110	3520-72-7	A
Pigment Orange 16	21160	6505-28-8	A
Pigment Orange 34 Pigment Orange 35 Pigment Orange 37	21115	15793-73-4	A

(Note)
C. I.: Color Index
The color indexes for pigments and dyes, published in the U. K.
Regulatory status = A: Exempted under the 5th Amendment

3.8 Formaldehyde

In the 1st edition, only the emission concentration of formaldehyde was determined; accordingly there have been lots of inquiries about how to measure it. When setting regulations against formaldehyde, the relevant laws and industry standards in each country and region were examined again, and finally Chamber method specified in EN 717-1 and Perforator method in EN 120 are adopted as standard measurement methods. Thus, either one of them shall be applied.

In Japan, the desiccator method specified by JIS standards and JAS ones is adopted. However, it is difficult to clearly correlate Chamber method or Perforator one with the emission quantity of formaldehyde measured by the desiccator method.

E0 materials specified by JIS pass the standards written in this Standard, but confirmation is necessary for E1 materials.

3.9 Polyvinyl chloride (PVC) and PVC blends

The resin containing polyvinyl-chloride polymers are used for many parts and devices because of their features such as workability, non-flammability, and low costs. Because it is difficult to know actual conditions on blends with other kinds of resin and on the copolymer products blended with other kinds of polymers, the polyvinyl-chloride blends used in a large quantity (the compounds to which stabilizers, fillers, pigments, or flame retardants are added to commercialize polyvinyl chloride) are classified at Level 2, and then this revision is made.

In this section, homo-type polymers among types of vinyl chloride are regulated; copolymers and graft copolymers are classified at Level 3, because it is difficult to establish substitute technologies for them.

Although the binding ties made of polyvinyl chloride are not specified in Table 4.2, substitute materials have replaced them, and the replacement process is nearly finished, because the large quantity of cadmium has been detected in most of the binding ties.

This SS-00259 regulates neither the use of the unplasticized vinyl chloride materials used for plant facilities and equipment (e.g. a chemical plant) nor the vinyl chloride products (e.g. bolts, nuts, and gaskets) used for these purposes. In addition, because there are no substitute materials that are technically suitable for the above purposes, the above-mentioned vinyl chloride materials and products are not regulated in this Technical Standard.

3.10 Regulation over the heavy metals contained in packaging materials

Not only each raw material contained in a packaging material must satisfy each relevant “Management standards for ‘The Controlled Substances,’” but also it is necessary to control the four heavy metals contained in each raw material.

A concentration standard of the total amount of four heavy metals is regulated. Regarding plastics, a determined cadmium concentration is less than 5 ppm. Less than 100 ppm is set as a standard value when other heavy metals are included. For example, when a cadmium concentration of a plastic is 4 ppm and the lead concentration is 98 ppm, standards for each metal are satisfied; however the plastic cannot satisfy law requirements because the total concentration of the two metals contained in the plastic is 102 ppm.

In addition, because it is not possible to measure a concentration of hexavalent chromium with the regulated devices, the total amount of chromium shall be measured once. Then, when more than 100 ppm is detected, hexavalent chromium shall be analyzed.

3.11 The substances that must not be used when manufacturing parts and devices

The substances that do not fit the purpose of this Standard are those regulated as “Substances that must not be used when parts and devices are manufactured” in the 1st edition. In addition, they have different characteristics from those of other substances. Therefore, they are excluded from this edition. Especially, the use of ozone depleting substances (CFC, HCFC, methyl bromide, carbon tetrachloride, and 1, 1, 1-trichloroethane) shall be left in suppliers’ hands because the active observance of “Montreal Protocol on Substances that Deplete the Ozone layer” is encouraged, and because observing it reflects a supplier’s attitude to society.

In light of “Water Pollution Control Law” and “Industrial Safety and Health Law,” both of which are Japanese laws, the following chlorinated organic compounds were written in the 1st edition: 1, 1, 2-trichloroethtane, 1, 2-dichloroethane, 1, 1- dichloroethane, 1, 2-dichloroethylene, methylemne chloride, chloroform, trichloroethylene, and tetrachloroethylene. But these substances do not cover all the ones regulated in each country. Therefore, their use shall be left in suppliers’ hands because it is a supplier’s responsibility to observe regulations in its own country.

Regarding the above-mentioned two-types of substances, suppliers must follow guiding principles regarding environmental-quality control such as the Green Partner System specially regulated by Quality Assurance Dept., Procurement Center.

The use of these substances shall be referred to suppliers’ voluntary control or reduction activities.

SS 索尼技术标准

Système International d'Unités

机密等级
C　　级

部件和材料中的环境管理物质　管理规定

中文译文

SS-00259

第四版

制定日期　2002 年 03 月 29 日
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SONY

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机密等级：C 级

本技术标准的管理及应用原则上适用于如下范围：

(1) 索尼株式会社（以下称索尼）

(2) 进行索尼以及有关索尼品牌商品业务的相关公司

(3) 索尼或者相关公司的任何一个部门所指定的公司外的相关人员

就本技术标准希望实施上述未规定的应用时，必须与索尼技术标准秘书处联系。

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目 录

机密等级
C　级

索尼技术标准

SS-00259-0

部件和材料中的环境管理物质　管理规定　一般原则

第四版

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目　　录

1. 本技术标准的定位

本技术标准依照“产品中的环境管理物质管理规则”（以下称为“管理规则”），明确该规则中所定义的环境管理物质，以便落实到使公司内部及客户而规定并发行。

2. 运营标准

(1) 有关本标准事项的审议和决定由各产品担当部门以及各部门的代表组成的“环境相关物质技术委员会”进行，审议和决定的事项由推进全公司环境技术部门的负责人进行裁定。

(2) 本标准有必要进行修改或废除时，需申明理由，向环境相关物质技术委员会提出申请。环境相关物质技术委员会就申请的内容进行审议，决定修改或废止事项。

3. 基本方针

在本标准中管理级别 1 级所指定的对象（物质和用途），不认可其在索尼产品中的使用。

(1) 对可定量测定的物质应考虑测定仪器的检测极限、误差以及自然界中存在的杂质的混入来设定标准值。

在这种情况下的测定方法以及判定标准将作为应用细则另行制定。

(2) 对难以进行定量测定、不能设定其标准值的物质，必须通过文件传阅等方式明确其不能使用。

机密等级
C 级

索尼技术标准

SS-00259-1

在部件和设备中包含的限制使用物质的管理标准

第四版

SONY

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(3) 索尼或者相关公司的任何一个部门所指定的公司外的相关人员

就本技术标准希望实施上述未规定的应用时，必须与索尼技术标准秘书处联系。

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目　录

1. 目　的

本技术标准，通过明确索尼产品的部件或设备等中所含环境管理物质中的禁止使用物质、计划全废物质以及对象范围外项目，来达到防止向索尼产品混入、遵守法令、保护地球环境以及减轻对生态系统影响的目的。

2. 适用范围

2.1 部件和材料的适用范围

适用于索尼集团以及索尼集团委托设计、制造的产品所包含的部件、材料及其他物品。这些必须符合本技术标准中规定的标准。

适用部件和材料等

- 半成品（功能单元、模块、板组件等的组装部件等）
- 部件（电气部件、机构部件、半导体器件、印刷电路板、记录介质、包装材料、包装部件）
- 螺丝
- 附件（遥控器、鼠标、AC 适配器等为设备使用而配套的附属品等）
- 产品所使用的附属材料（胶带、焊接材料、粘结剂等）等构成材料
- 操作说明书
- 修理用部件(已出货产品的修理用部分部件按照另外的通知书执行)
- 部件的交货人发送和保护货物所使用的包装材料　（参照 表 4.3a）

2.2 产品的适用范围

(1) 由索尼集团设计、制造、销售并且发布的索尼产品

(2) 索尼集团委托第三者设计、制造，贴有索尼集团的商标进行销售或发布的索尼产品

(3) 第三者委托索尼集团进行设计、制造的产品
（但是，由该第三者指定的部件、材料除外）

此外，在本技术标准中未明确规定的物质或者其用途，如果各国或当地法令禁止使用或限制使用，必须按照其法令执行。

3. 术语的定义

本技术标准，对术语做如下定义。

(1) 环境管理物质
索尼判断在部件、设备等所含有的物质中，有对地球环境和人体存在显著影响的物质。

(2) 管理级别
按照以下 3 种管理级别和适用对象外进行管理。

(a) 1 级
对于该物质及其用途立即禁止使用。

(b) 2 级
对于该物质及其用途规定一定时期予以禁止。
超过表中规定的日期之后，不能在部件及材料中使用，到达期限时指定为“1 级”。

(c) 3 级
目前虽然没有规定全废的日期目标，但指定了全废的使用部件、材料中含有的物质及其用途。
把被判断为可以确立代替部件、开发材料和代替技术的产品转变为 2 级，逐步实现全废。

(d)适用对象外
法令规定对象外或在现阶段没有代替技术方案的物质和用途部位。

(3) 含有
含有系指无论是否有意，所有在产品的部件、设备或使用的材料中添加、填充、混入或粘附的物质（包括在加工过程中无意混入或粘附于产品中的物质）。

(4) 杂质
包含在天然材料中，作为工业材料使用，在精制过程中技术上不能完全去除的物质（natural impurity），或者合成反应过程中产生，而在技术上不能完全去除的物质。

此外，为了与主原料加以区别，在为了改变材料的特性而使用称为“杂质”的物质时，也按“含有”处理。
但是，在制造半导体设备等使用的掺杂剂（Dopant），虽然是有意添加的，但实质上在半导体设备中仅有极微量残存，这中情况不作为“含有”处理。

此外，在本技术标准中，在指定允许浓度的情况下，当在部件、设备中该环境管理物质作为杂质混入或者粘附时，其浓度不应超过该允许浓度。

(5) 禁止供货时期
部件和材料禁止向索尼供货的时期

(6) SS-00259 中的塑料
－ 合成高分子物质形成的材料或素材 －
合成高分子生成的纤维、胶片、胶带、成形产品、合成橡胶产品、植物原料塑料、粘合剂等。
＊天然树脂与上述合成高分子物质合成时按塑料处理。

4. 环境管理物质的管理标准

4.1 环境管理物质

本技术标准中作为对象的环境管理物质名称

表 4.1　环境管理物质名称一览

<table>
<tr><th colspan="2">物质名称</th></tr>
<tr><td rowspan="4">重金属</td><td>镉以及镉化合物</td></tr>
<tr><td>铅以及铅化合物</td></tr>
<tr><td>汞以及汞化合物</td></tr>
<tr><td>六价铬化合物</td></tr>
<tr><td rowspan="3">有机氯化合物</td><td>聚氯联苯（PCB）
聚氯化萘（PCN）
聚氯三联苯（PCT）</td></tr>
<tr><td>氯代烷烃（CP）</td></tr>
<tr><td>其他有机氯化合物</td></tr>
<tr><td rowspan="3">有机溴化合物</td><td>聚溴联苯（PBB）</td></tr>
<tr><td>聚溴二苯醚（PBDE）</td></tr>
<tr><td>其他有机溴化合物</td></tr>
<tr><td colspan="2">三丁基锡化合物、三苯基锡化合物</td></tr>
<tr><td colspan="2">石棉</td></tr>
<tr><td colspan="2">特定偶氮化合物</td></tr>
<tr><td colspan="2">甲醛</td></tr>
<tr><td colspan="2">聚氯乙烯（PVC）以及 聚氯乙烯混合物</td></tr>
</table>

表 4.2　环境管理物质的主要对象和禁止供货时期

<table>
<tr><td colspan="3">物质名称：镉以及镉化合物</td></tr>
<tr><td colspan="3">说明：金属、合金、无机化合物、有机化合物、无机盐、有机盐等含有镉元素的所有物质为对象范围</td></tr>
<tr><td colspan="2">对象</td><td>禁止供货时期</td></tr>
<tr><td rowspan="2">1 级</td><td>· 包装部件（参照 P.13）
· 塑料（包括橡胶）材料中使用的稳定剂、颜料、染料
（电气连线的绝缘体、遥控器键、捆绑带、电子部件的外装树脂、外框、标签、唱片等）
· 涂料、墨水
· 表面处理（电镀等）、涂层
· 照片胶卷
· 日光灯（小型日光灯、直管日光灯）</td><td>立即执行</td></tr>
<tr><td>2 级、适用对象外的所有用途。例如，
· 直流电动机、开关、继电器、断路器等电接点
· 温度保险丝的可熔体
· 玻璃以及玻璃涂料的颜料、染料（用于玻璃的颜料、染料以及玻璃用涂料）
· 焊锡（镉含量为 20 ppm 以上的焊锡）
· 荧光显示装置中含有的荧光体、CdS 光导电池单元
· 电阻（玻璃料）
等</td><td>立即执行
(从 2005 年 1 月 1 日开始)</td></tr>
<tr><td>2 级</td><td>由含锌金属（黄铜、锌铸件等）构成的部件・部位，镉的含量超过 100ppm 的产品</td><td>从 2005 年 10 月 1 日开始</td></tr>
<tr><td>适用对象外</td><td>· 要求使用可靠性高的电接点电镀而没有代替材料的产品
· 光学玻璃、滤光玻璃</td><td></td></tr>
</table>

允许浓度：　5 ppm 以下；【测定对象：塑料（包括橡胶）、涂料、墨水】
测定标准： (1) 预处理 有关预处理方法主要有下列 4 种: 1.硫酸存在下的灰化法 2.在密闭容器中的加压酸分解法（包括微波分解法(例如 EN 13346:2000 或 EPA 3052:1996）） 3.采用硝酸、过氧化氢、盐酸的酸分解法（例如 EPA3050B Rev.2:1996) 4.采用硫酸、硝酸、过氧化氢的湿式分解法（例如 BS EN1122： 2001)等。 ※ 在上述所有之中，发生沉淀物（不溶物）时，必须采用任何方法（碱溶融法等）使其完全溶解制成溶液。 (2) 测定法 有关测定方法主要有下列 3 种: 1.感应等离子体发光分光分析装置[ICP-AES(ICP-OES）]。例如 EN ISO 11885: 1998 2.原子吸光分析装置(AAS);例如 EN ISO 5961： 1995 3.感应等离子体质量分析装置(ICP-MS) · 除以上之外，通过预处理和测定装置的组合，如果可以保证镉的定量下限为 5 ppm 以下时则为正品。此外，镉和铅也可以采用上述 AAS 以外的方法同时进行分析。 （注） 由 EN 71-3: 1994、ASTM F963-96a、ISO 8124-3 所代表的溶出法不适用于预处理。 工业排水试验法的 JIS K0102-55 仅为测定法，因此必须同时记述预处理的方法。

物质名称：铅以及铅化合物		
说明：金属、合金、无机化合物、有机化合物、无机盐、有机盐等包含铅元素的所有物质为对象范围		
对象		禁止供货时期
1 级	· 包装材料（参照 P.13） · 用于印刷电路板而使用铅的涂料、墨水	立即执行
	· 部件的外部电极、引线端子等的表面处理 （电气部件 / 半导体设备 / 散热片等） · AC 适配器、电源电缆、连接电缆、遥控器、鼠标、设备外露部分中使用的塑料（包括橡胶）材料中的稳定剂、颜料、染料 · 机器外露部位中使用的涂料、墨水	立即执行 (从 2004 年 4 月 1 日开始)
	3 级、适用对象外项目以外的所有用途。例如， · 部件的外部电极、引线端子等的表面处理中 AC 适配器、遥控器、半导体设备等内装的部件 · 铅在 85 wt% 以下的有铅焊锡中，所含有的铅的含量超过 1000 ppm 的产品。 · 含有允许浓度[*1]以上的各种合金（包括焊锡材料） · AC 适配器、电源电缆、连接电缆、遥控器、鼠标、设备的外露部分以外所使用的塑料（包括橡胶）材料中的稳定剂、颜料、染料 · 机器外露部位以外使用的涂料、墨水	立即执行 (从 2005 年 1 月 1 日开始)
3 级	· 使用于无电解镀镍、无电解镀金时的稳定剂、添加剂的铅	

适用对象外	・ 部件、设备的连接用高熔点焊锡（铅为 85 wt% 以上的有铅焊锡） ・ 电子陶瓷部件【压电元件，陶瓷感应材料、磁性材料(铁氧体)】 ・ 光学玻璃、滤光玻璃 ・ 显像管、电子部件、荧光显示管所使用的玻璃材料 电子部件中使用的玻璃材料，包括电阻、导电浆(银浆、铜浆)、粘结剂、玻璃料、密封材等。 ・ 用于连接微处理器端子和器件封装的焊锡中由 2 种以上的元素组成，铅的含量为 80wt%以上 85wt%以下的焊锡。 ・ 连接 Flip Chip 器件封装内部的半导体芯片和连接电路板的焊锡(包括 C4 焊锡球下的焊锡浆)。 ・ 使用于服务器、存储器以及存储运算系统、开关 / 信号器 / 电传送网络基础装置以及通讯管理网络的焊锡。 ・ 含有的如下合金（*1） 合金的种类　含铅允许浓度 钢材　0.35 wt%以下 铝合金　0.4 wt%以下 铜合金(也包括铸铜、磷青铜)　4 wt%以下 焊锡　1000 ppm 以下	

允许浓度：　100 ppm 以下；【测定对象：塑料（包括橡胶）、涂料、墨水】
测定标准： (1) 预处理 有关预处理方法主要有下列 4 种： 1.硫酸存在下的灰化法 2.在密闭容器中的加压酸分解法（包括微波分解法(例如 EN 13346:2000 或 EPA 3052:1996）） 3.采用硝酸、过氧化氢、盐酸的酸分解法（例如 EPA3050B Rev.2:1996) 4.采用硝酸、过氧化氢的湿式分解法等。 ※在上述所有之中，发生沉淀物（不溶物）时，必须采用任何方法（碱溶融法等）使其完全溶解制成溶液。 (2) 测定法 有关测定方法主要有下列 3 种： 1.感应等离子体发光分光分析装置[ICP-AES(ICP-OES)];例如 EN ISO 11885: 1998 2.原子吸光分析装置(AAS);例如 EN ISO 5961： 1995 3.感应等离子体质量分析装置(ICP-MS) ・ 除以上之外，通过预处理和测定装置的组合，如果可以保证铅的定量下限为 30 ppm 以下时则为正品。此外，镉和铅也可以采用上述 AAS 以外的方法同时进行分析。 （注） EN 71-3:1994、ASTM F963-96a、ISO 8124-3 所代表的溶出法不适用于预处理。 另外，EN 1122 也不适用于对铅的预处理法。 工业排水试验法的 JIS K0102-54 仅为测定法，因此必须同时记述预处理的方法。

物质名称：汞以及汞化合物		
说明：金属、合金、无机化合物、有机化合物、无机盐、有机盐等含有汞元素的所有物质为对象范围		
对象		禁止供货时期
1 级	・ 包装材料（参照 P.13） ・ 涂料、墨水 ・ 计时器 ・ 小型日光灯（液晶背光等）： 每支的含量超过 10 mg。 ・ 直管日光灯：每一支的含量超过 20 mg 的。 ・ 使用汞作为接点的继电器、开关、传感器 ・ 塑料中的添加剂	立即执行
	・ 小型日光灯：每一支的含量为 5 mg 以上的。 ・ 直管日光灯：每一支的含量为 5 mg 以上的。 ・ 适用对象外项目的所有用途	立即执行 （从 2005 年 1 月 1 日开始）
适用对象外	・ 小型日光灯、直管日光灯以外的灯（高压汞灯等） ・ 小型日光灯：每一支的含量为 5 mg 以下的。 ・ 直管日光灯：每一支的含量为 5 mg 以下的。	

物质名称：六价铬化合物		
说明：无机化合物、有机化合物、无机盐、有机盐等含有六价铬的所有物质为其对象范围。金属铬、合金铬为对象之外。		
对象		禁止供货时期
1级	· 包装材料（参照P.13）	立即执行
	· 作为电镀表面的防锈处理（螺丝、钢板等）、墨水或涂料的颜料等的成分而含有的所有用途	立即执行（从2005年1月1日开始）

物质名称：聚氯联苯（PCB）、聚氯化萘（PCN）、聚氯三联苯（PCT）		
对象		禁止供货时期
1级	· 油浸变压器、电容器、绝缘油、润滑油、塑料阻燃剂等所有用途	立即执行

物质名称：氯代烷烃（CP）		
说明：以“碳链长为10－13、含氯量为48wt%以上的短链型氯代烷烃”为对象。		
对象		禁止供货时期
1级	· 用作含有附件产品的外框（外壳）、印刷电路板。	立即执行
3级	· 1级以外的所有用途。	

物质名称：其他有机氯化合物		
对象		禁止供货时期
3级	· 用于塑料的阻燃剂、增塑剂、印刷电路板等上的阻燃剂等用途	

物质名称：聚溴联苯（PBB）		
对象		禁止供货时期
1 级	· 用于塑料的阻燃剂等所有用途	立即执行

物质名称：聚溴二苯醚（PBDE）		
对象		禁止供货时期
1 级	· 塑料的阻燃剂等所有用途	立即执行
	· 使用 2002 年 12 月以前的模具制造的部件（限定于向欧洲以外出口的 TV、显示器的框体） 2003 年 1 月以后的新型模具部件将禁止采用	立即执行 （从 2005 年 1 月 1 日开始）

物质名称：其他有机溴化合物		
对象		禁止供货时期
3 级	· 用于塑料的阻燃剂、印刷电路板等上的阻燃剂等用途	

物质名称：三丁基锡化合物、三苯基锡化合物		
对象		禁止供货时期
1 级	· 涂料、墨水、防腐剂、防锈剂等所有用途	立即执行

物质名称：石棉		
对象		禁止供货时期
1 级	· 绝缘材、填料等所有用途	立即执行

<table>
<tr><td colspan="3">物质名称：特定偶氮化合物</td></tr>
<tr><td colspan="2">对象</td><td>禁止供货时期</td></tr>
<tr><td>1 级</td><td>· 按照德国日用品规则的试验法将偶氮化合物进行分解，有可能产生表 4.2a 中的胺，适用于与人体持续接触产品的人体接触部分（耳机、微型耳机、肩包的肩垫、皮带、绳索等）的颜料。</td><td>立即执行</td></tr>
<tr><td>3 级</td><td>· 按照德国日用品规则的试验法将偶氮化合物进行分解，有可能产生表 4.2a 中的胺，因此用于不与人体持续接触的部位（遥控器、胶垫、载运框、鼠标等）</td><td></td></tr>
<tr><td colspan="3">试验法（参考）
分解偶氮化合物、萃取胺的方法有：
EN 14362-1: 2003 „ Textiles-Methods for the determination of certain aromatic amines derived from azocolourants
- Part 1: Detection of the use of certain azocolorants accessible without extraction “
CEN ISO/TS 17234:2003 „Leather-Chemical tests - Determination of certain azocolorants in dyed leathers “
EN 14362-2: 2003 „ Textiles-Methods for the determination of certain aromatic amines derived from azocolourants
- Part 2: Detection of the use of certain azocolorants accessible by extracting the fibres”。</td></tr>
</table>

表 4.2a　偶氮化合物分解而不得产生的胺一览

CAS No.	胺
92-67-1	4-氨基苯基苯
92-87-5	对二氨基联苯
95-69-2	4-氯-o-甲苯胺
91-59-8	2-萘胺
97-56-3	o-邻氨基偶氮甲苯
99-55-8	2-氨基-4-四硝基甲苯
106-47-8	p-氯苯胺
615-05-4	2,4-二氨基甲氧基苯甲醚
101-77-9	4,4’-二氨基苯化甲烷
91-94-1	3,3’-二氯联苯胺
119-90-4	3,3’-二甲氧基联苯胺
119-93-7	3,3’-二甲基联苯胺
838-88-0	3,3’-二甲基-4,4’-二氨基二苯甲烷
120-71-8	p-氨基对甲苯甲醚
101-14-4	4,4’-亚甲基-双-（2-氯苯胺）
101-80-4	4,4’-氧代苯胺
139-65-1	4,4’-硫双苯胺
95-53-4	o-甲苯胺
95-80-7	2,4-甲代苯二胺
137-17-7	2,4,5-三甲苯胺
90-04-0	o-氨基苯甲醚
60-09-3	4-氨基偶氮苯

<table>
<tr><td colspan="3">物质名称：甲醛</td></tr>
<tr><td colspan="2">对象</td><td>禁止供货时期</td></tr>
<tr><td rowspan="2">1 级</td><td>· 出口欧州产品中的纤维板、木屑板以及胶合板的木工产品（扬声器、机架等）</td><td>立即执行</td></tr>
<tr><td>· 非出口欧州产品中的纤维板、木屑板以及胶合板的木工产品（扬声器、机架等）</td><td>立即执行
（从 2005 年 1 月 1 日开始）</td></tr>
<tr><td colspan="3">标准值（排放浓度）：采用下列方法中的任何方法
1）气密试验室法　空气中浓度 $12m^3$，用 $1m^3$或 $0.0225m^3$的气密试验槽为 0.1 ppm以下（$0.124mg/m^3$以下）
2）穿孔器法　·未经表面处理的木屑板 100g 平均 6.5 mg 以下（6 个月的平均值）
·未经表面处理的纤维板 100g 平均 7.0 mg 以下（6 个月的平均值）
或
未经表面处理的木屑板、纤维板 100g 平均 8.0mg 以下（按照 EN120 的 1 次测定值）
3）干燥器法　平均 0.5mg/l 以下、最大 0.7mg/l 以下（用 N＝2 确认平均值、最大值）</td></tr>
<tr><td colspan="3">测定法: 气密试验室法 EN 717-1:2002 (Wood based panels; determination of formaldehyde release; formaldehyde emission by the chamber method)
穿孔器法 EN 120 (Wood based panels; determination of formaldehyde content; extraction method called perforator method; EN 120:1992)
干燥器法　JIS A 5905 (Fibreboards)、JIS A 5908（Particleboards）</td></tr>
</table>

<table>
<tr><td colspan="3">物质名称：聚氯乙烯（PVC）以及聚氯乙烯混合物</td></tr>
<tr><td colspan="2">对象</td><td>禁止供货时期</td></tr>
<tr><td rowspan="2">1 级</td><td>· 捆绑带（聚氯乙烯制）</td><td>立即执行</td></tr>
<tr><td>· 用于产品包装的塑料布（气泡防震布、外包装盒、防护袋等）
· 遥控器、电缆等与产品一同包装的包装材（袋、胶带、纸箱、外包装盒等）</td><td>即時
（从 2005 年 1 月 1 日开始）</td></tr>
<tr><td rowspan="2">2 级</td><td>· 热收缩软管</td><td>从 2005 年 4 月 1 日开始</td></tr>
<tr><td>· 使用于木工产品外包装的塑料布、包封类（木制箱、木制扬声器的包封等）</td><td>从 2006 年 1 月 1 日开始</td></tr>
</table>

<table>
<tr><td colspan="2">物质名称：聚氯乙烯（PVC）以及聚氯乙烯混合物</td><td>适用新机种时期</td></tr>
<tr><td rowspan="3">2 级</td><td>连接电缆（１）：便携型机器用电缆（耳塞机、耳机、带麦克风耳机的电缆等）</td><td>从 2006 年 1 月 1 日开始*注)</td></tr>
<tr><td>・ 使用带电缆的连接器等线材的部件、马达引线等机内布线用电线材
・ 机器内外部使用的绝缘和保护用的涂层、绝缘软管、绝缘板、装饰板、标签、传送带、衬垫、支架、护盖、通道等
・ 电源线(包括插头、连接器、电缆卡头)：［2P、3P（电气安全法）］
・ 连接电缆（２）：USB、iLink、RCA、AC 适配器次级引线、多芯复合电缆、扬声器电缆等</td><td>从 2007 年 1 月 1 日开始*注)</td></tr>
<tr><td>・ 索尼设计的屏蔽线、加工线材(同轴电缆、扁平电缆、双重屏蔽电线、铠装线等)</td><td>从 2008 年 1 月 1 日开始*注)</td></tr>
<tr><td>3 级</td><td>・ 电源线(包括插头、连接器、电缆卡头)：［2P、3P（U/C）］
・ 画图纸
・ 电容器、电源开关、保险丝用途的绝缘盖
・ 部件交货人的部件包装用托盘、料管、带盘、包装卷带等
・ 1 级,2 级以及对象外项目的部件</td><td></td></tr>
<tr><td>适用对象外</td><td>・ 树脂用粘合剂
・ 高压塑料电线
・ 绝缘带
・ 扬声器托架
・ 出口 EU 的电源线
・ 1 级、2 级、3 级以外的对象中，使用氯乙烯共聚以及聚氯乙烯与其它聚合物的共混物的部件
・ 变压器引线部（清漆浸渍的部分）
・ 卷线
・ 机内布线材中，AWG36 以上的极细电线
・ 业务用机器中不能使用通用电缆的用途（广播电视台用摄像机电缆、麦克风电缆等）</td><td></td></tr>
</table>

*注)自开始日期起索尼所投产的新型号开始适用。

4.2 有关包装材料的补充事项

4．2．1 包装材料的定义

包装材料是指为了将原材料直至加工品从生产者送到使用者或消费者，而由用于“装入”、“保护”、“使用”、“运送”、“交付”的所有种类的全部材料所构成的产品。

表 4.3 有关包装材料的追加事项

<table>
<tr><td colspan="3">物质名称：重金属
（镉、铅、六价铬、汞）</td></tr>
<tr><td colspan="3">说明：加上第 4.1 项（表 4.2）的规定，根据法律规定，必须符合以下条件</td></tr>
<tr><td colspan="2">对象</td><td>禁止供货时期</td></tr>
<tr><td>1 级</td><td>· 表 4.3a 记述的包装材料为对象</td><td>立即执行</td></tr>
<tr><td>适用对象外</td><td>· 部件交货人所有的搬运箱属于对象外</td><td></td></tr>
<tr><td colspan="3">允许浓度：
· 汞、镉、六价铬、铅等重金属的允许浓度，按包装的各部件材料、墨水、涂料等，重金属合计为 100 ppm 以下。但是，塑料（包括橡胶）、涂料、墨水的部位，镉、铅的允许浓度应达到镉和镉化合物、铅和铅化合物的规定。
【主要塑料部位：把手、塑料袋、防震材料、胶片、托盘、导轨、胶带、仓库杆状物（包括止动器)、捆绑带等】</td></tr>
<tr><td colspan="3">对于铬，首先对总铬量进行分析，确认 4 种元素合计是否为 100 ppm 以下。此时，可以与镉和铅同时进行预处理。
作为总铬量分析的结果，当 4 种元素合计为 100 ppm 以上时，必须确认铬是否为六价铬，最后确认汞、镉、六价铬、铅的合计是否为 100 ppm 以下。

测定标准：
(1) 预处理
关于镉、铅，以塑料种的镉（P.5）、铅（P.7）的方法为准。

关于汞主要有下列 3 种方法:
1.闭容器内的加压酸分解法（包括微波分解法（例如 EPA 3052:1996））
2.加热气化-冷原子吸光法
3.采用回流冷却器分解烧瓶（凯尔达鲁法）的硫酸、硝酸的湿式分解法等。
※必须注意无论采用哪种方法都不能让汞挥发。另外，产生沉淀物时必须采取某种方法使其溶解成为溶液。

(2)测定装置
对于镉、铅、总铬，以塑料中的镉（P.5）、铅（P.7）的方法为准。
对于汞，与塑料中的镉（P.5）、铅（P.7）的方法相同，但是如果估计有低浓度混入时，则认为适于采用还原气化原子吸光法、带有氢气发生装置的 ICP-AES(ICP-OES)、ICP-MS 法进行分析。</td></tr>
</table>

六价铬或三价铬的判定
（※关于包装材料，镉、铅、汞、总铬的 4 种元素合计达 100ppm 以上时的确认方法）
测定标准：
(1) 预处理
溶出法（温水提取法、碱提取法(例如 EPA 3060A)）
(2) 测定方法
紫外-可见光吸光光度法（例如 EPA 7196A）

- 如果预处理和测定装置的各种组合，可以保证定量下限分别为汞 5 ppm 以下、镉 5 ppm 以下、总铬 5 ppm 以下、铅 30 ppm 以下，则作为正品。此外，可以同时采用 AAS 以外的方法对镉、铅、总铬量进行分析。

表 4.3a　包装材的识别

用于组合和业务用产品的包装　（用于索尼产品运输的包装）		
PACKAGING		
1.	纸箱（箱）	各种材料制成的纸箱、辅助纸箱、主纸箱
2.	防震材料	
3.	防护带（布）	泡沫塑料或不织布等
4.	塑料袋	
5.	信封	装保证书的信封等
6.	外包装盒	
7.	胶片	包括液晶显示器表面等贴的保护胶片
8.	抓斗	
9.	隔板	
10.	印刷油墨	用于包装材印刷的油墨
11.	胶带	用于纸箱、塑料袋的封装的胶带
12.	固定钉	
13.	标签	条形码标签那样的索尼管理下贴到包装部件上的标签
14.	接头	纸箱接头等
15.	捆绑带	PP 带子等
16.	吊件	
17.	拉手	
18.	外框	木框等
19.	收缩胶片	
20.	螺栓	
21.	套筒	
22.	装饰箱	相当于钢笔、化妆品的装饰箱
23.	防滑垫	

NOT PACKAGING		
1.	CD 盒子	用于录像带、CD、MO、MD、DVD 等的盒子、筒盒等，被视为产品的一部分
2.	检索卡片	附属于 CD 等记录媒体的检索卡片等
3.	传送盒/袋	附属于耳机、播放器、照相机等，被视为产品的一部分
4.	标签	贴到包装材料以外的标签
5.	标签	由第 3 者贴的货物标签、发票等

除上述以外，还有用于设备、半导体以及其他部件的包装材料		
PACKAGING		
1.	仓库杆状物	用于 IC 等的运输的
2.	止动器	
3.	托盘	
4.	带盘	

除上述以外，还有用于物资流通的包装材料		
PACKAGING		
1.	板条托架	包括防滑板的木制、塑料制、纸制等 One-Way 规格的托架
2.	木框	
3.	弹性胶片	防止货物变形等用
4.	木制集装箱	
5.	辅助包装用包装材	用于运输部件用的辅助包装材料等
6.	带	PP 带等
NOT PACKAGING		
1.	轮船和空运集装箱	海运用 40 英尺集装箱、空运集装箱等

4.3 有关电池的补充事项（适用于与产品同时包装和另外出售等所有的商品流通形式）

表 4.4 有关电池的补充事项

<table>
<tr><td colspan="4">物质名称：重金属
（镉、铅、汞）</td></tr>
<tr><td colspan="4">说明：对象范围为金属、合金、无机化合物、有机化合物、无机盐、有机盐等含有镉、铅、汞元素的所有物质。</td></tr>
<tr><td colspan="3">对象</td><td>禁止供货时期</td></tr>
<tr><td rowspan="4">1级</td><td>Cd</td><td>・ 作为新部件交货的镍/镉电池。
但是，所有的镍/镉电池从 2007 年 1 月开始禁止交货</td><td>立即执行
（从 2003 年 4 月 1 日开始）</td></tr>
<tr><td rowspan="2">Pb</td><td>・ 除小型密封铅电池以外的电池和电池组，且其铅含量占总重量的 0.4%以上的电池</td><td>立即执行</td></tr>
<tr><td>・ 作为新部件交货的小型密封铅电池。
但是，所有的小型密封铅电池从 2005 年 1 月开始禁止交货</td><td>立即执行
（从 2003 年 4 月 1 日开始）</td></tr>
<tr><td>Hg</td><td>・ 钮扣电池中，其汞含量占电池总重量的 2%以上的电池。
・ 钮扣电池以外的电池和电池组中，其汞含量占电池总重量的 0.0005%以上的电池。</td><td>立即执行</td></tr>
<tr><td rowspan="2">适用对象外</td><td>Pb</td><td>・ 除小型密封铅电池以外的电池和电池组，且其铅含量占总重量的 0.4%以下的电池。但是，使用于电池组等的塑料（包括橡胶）、涂料、墨水中的铅和有铅焊锡，则适用于 1 级应按照规定执行。</td><td></td></tr>
<tr><td>Hg</td><td>・ 钮扣电池中，其汞含量占电池的总重量的 2%以下的电池。
・ 钮扣电池以外的电池和电池组中，其汞含量占电池总重量的 0.0005%以下的电池。</td><td></td></tr>
</table>

5. 与客户之间的规格交换

在从索尼借给供货商的部件、材料等规格书或者图纸中，必须明确记载“此部件中不能使用含有 SS-00259-1 指定物质的材料”。

关于本技术标准中规定的允许含量，供货商必须采取适当的方法掌握含量，进行管理。为了遵守法律法规，对于指定为严格管理的对象(1 级)，当记载有索尼要求的方法时，必须按照要求提出符合允许含量的证明。

对于其具体运用，必须遵照索尼资材部门另行制定的运用规定以及“环境质量保证指导方针”等进行管理。

附加文档

1. 世界各国和地区就物质使用实施的法律法规

2. 所属物质的详细信息(典型实例)

・镉以及镉化合物
・铅以及铅化合物
・汞以及汞化合物
・六价铬化合物
・聚氯联苯（PCB）、聚氯化萘（PCN）、聚氯三联苯（PCT）
・氯化萘（CP）
・聚溴联苯（PBB）
・聚溴二苯醚（PBDE）
・三丁基锡化合物、三苯基锡化合物
・石棉
・甲醛
・聚氯乙烯（PVC）以及聚氯乙烯混合物

注意事项：此表仅为示例，索尼不保证汇总了全部内容。

1. 世界各国和地区就物质使用实施的法律法规

注）这是记载的至 2002 年 9 月所确认的内容。由于法律规定的内容会有变动，详细确认请参照各国法律规定的最新版。

物质名称	法律法规
镉以及镉化合物	欧盟规程建议
	欧盟各国管制规定
	欧盟欧洲危险物质使用限制规程建议等
	欧盟电池规程建议
铅以及铅化合物	美国加利福尼亚州法（第 65 号提案）
	欧盟欧洲危险物质使用限制规程建议等
	欧盟电池规程建议
汞以及汞化合物	荷兰管制规定
	欧盟欧洲危险物质使用限制规程建议等
	丹麦管制规定
	瑞典管制规定
	中国电池管制规定
六价铬化合物	欧盟规程建议
	欧盟欧洲危险物质使用限制规程建议
聚氯联苯（PCB）、聚氯化萘（PCN）、聚氯三联苯（PCT）	日本化学物质审查法第 1 种等特定化学物质 76/769/EEC
短链型氯代烷烃（CP） 炭链长度 10－13 氯的含量 48 wt% 以上	虽然没有在任何法律法规中加以规定，但在环保标签中有规定（蓝色天使 / TC095 等）
聚溴联苯（PBB）	欧盟规程建议
	欧盟欧洲危险物质使用限制规程建议
聚溴二苯醚（PBDE）	欧盟规程建议
	欧盟欧洲危险物质使用限制规程建议
三丁基锡化合物、三苯基锡化合物	日本化学物质审查法第 1 种、第 2 种特定化学物质
石棉	日本劳动安全卫生法等
甲醛	德国甲醛管制规定、丹麦福尔马林管制规定等
特定偶氮化合物	欧盟规程建议、76/769/EEC
重金属（镉、汞、六价铬）	欧盟有关包装以及包装废弃物的命令（94/62/EC）等
	美国纽约州与其他 16 州包装材重金属规定

2. 所属物质的详细信息(典型实例)

●镉以及镉化合物

1．所属物质的例子

所属物质是指包含镉元素的全部物质。

中文名称 （通称、简称、化学名称等）	英文名称	CAS号码	化学分子式	主要指定用途
镉	Cadmium	7440-43-9	Cd	连接材料、表面处理 镍镉电池
镉合金	Cadmium alloys			低熔点焊接、保险丝等
氧化镉	Cadmium oxide	1306-19-0	CdO	颜料、碱性电池 化学合成材料
氯化镉	Cadmium chloride	10108-64-2	$CdCl_2$	用于电镀浴（液）、氯乙烯的稳定剂
硫化镉; 镉黄	Cadmium sulfide	1306-23-6 8048-07-5	CdS	颜料、半导体受光元件、油漆、墨水
硝酸镉	Cadmium nitrate	10325-94-7	$Cd(NO_3)_2$	着色剂、电池、相片
四水硝酸镉	Cadmium nitrate tetrahydrate	10022-68-1	$Cd(NO_3)_2 \cdot 4H_2O$	
硫酸镉	Cadmium sulfate	10124-36-4	$CdSO_4$	镉电池、电镀光泽剂、试剂
硬脂酸镉；镉肥皂	Cadmium stearate	2223-93-0	$Cd(C_{18}H_{35}O_2)_2$	用于氯乙烯的稳定剂
其他镉化合物	Other cadmium compounds			

●铅以及铅化合物

1．所属物质的例子

所属物质是指包含铅元素的全部物质。

中文名称（通称、简称、化学名称等）	英文名称	CAS号码	化学分子式	主要指定用途
铅、金属铅	Lead metal	7439-92-1	Pb	
铅/锡合金	Lead / tin alloy		Pb-Sn	焊接、涂蜡材料、电气连接
氧化铅；一氧化铅；氧化亚铅；氧化铅(II 价)；密陀僧；铅黄	Lead (II) oxide	1317-36-8	PbO	颜料、橡胶硫化促进剂、 固体润滑剂
二氧化铅；氧化亚铅；氧化二铅；氧化铅(IV价)；过氧化铅	Lead (IV) oxide	1309-60-0	PbO_2	铅酸电池、橡胶固化剂、颜料的原料
三氧化二铅；三二氧化铅	Dilead trioxide	-	Pb_2O_3	
四氧化三铅；四三氧化铅；铅丹；光明丹	Lead (II,IV) oxide	1314-41-6	Pb_3O_4	颜料、铅酸电池、玻璃、涂料
叠氮化铅、铅叠氮化物	Lead azide	13424-46-9	PbN_6	
二氟化铅；氟化亚铅；氟化铅(II价)	Lead (II) fluoride	7783-46-2	PbF_2	特殊光学玻璃、颜料
二氯化铅；氯化铅(II价)；氯化铅	Lead (II) chloride	7758-95-4	$PbCl_2$	
四氯化铅；氯化铅(IV价)	Lead (IV) chloride;	13463-30-4	$PbCl_4$	
碘化亚铅；碘化铅(II价)	Lead (II) iodide	10101-63-0	PbI_2	青铜、印刷、相片
硫化铅(II价)	Lead (II) sulfide	1314-87-0	PbS	半导体紫外线检测器
氰化铅(II价)	Lead (II) cyanide	592-05-2	$Pb(CN)_2$	防锈颜料
氟化硼铅	Lead fluoroborate	13814-96-5	$Pb(BF_4)_2$	电镀浴（液）、耐蚀表面处理
氟化硅铅	Lead fluosilicate	25808-74-6	$PbSiF_6$	电镀浴（液）、铅精炼
硝酸铅	Lead nitrate	10099-74-8	$Pb(NO_3)_2$	光学玻璃
碳酸铅	Lead carbonate	598-63-0	$PbCO_3$	
氢氧碳化铅；氯化碳酸铅；铅白	Lead hydroxycarbonate	1344-36-1	$(PbCO_3)_2$ $Pb(OH)_2$	颜料、聚氯乙烯稳定剂
过氯酸铅	Lead perchlorate	13637-76-8	$Pb(ClO_4)_2$	
硫酸亚铅；硫酸铅(II价)	Lead (II) sulfate	7446-14-2; 15739-80-7	$PbSO_4$	颜料、橡胶配合剂、聚氯乙烯稳定剂、 电池
氧基硫酸铅；三代硫酸铅	Lead oxide sulfate	12202-17-4	Pb_4SO_7	颜料
正磷酸铅；磷酸铅	Lead (II) phosphate	7446-27-7	$Pb_3(PO_4)_2$	塑料稳定剂
硫氰酸铅	Lead thiocyanate	592-87-0	$Pb(SCN)_2$	染色、火柴

中文名称 （通称、简称、化学名称等）	英文名称	CAS号码	化学分子式	主要指定用途
三水醋酸亚铅； 三水醋酸铅(II 价)	Lead(II) acetate, trihydrate	6080-56-4	$Pb(CH3COO)_2 \cdot 3H_2O$	
醋酸亚铅；醋酸铅(II价)；铅糖	Lead(II) acetate	301-04-2	$Pb(CH_3COO)_2$	
醋酸二铅；醋酸铅(IV价)	Lead(IV) acetate	546-67-8	$Pb(CH_3COO)_4$	
油酸盐铅	Lead oleate	1120-46-3	$Pb[CH_3(CH_2)_7CH=CH(CH_2)_7COO]_2$	润滑剂、硬化剂等
硬脂酸铅	Lead stearate	7428-48-0	$Pb(C_{17}H_{35}COO)_2$	聚氯乙烯稳定剂、润滑剂
偏硼酸铅(II价)；硼酸铅	Lead(II) metaborate	10214-39-8	$Pb(BO_2)_2 \cdot H_2O$	油漆的干燥剂
偏硅酸铅；硅酸铅	Lead metasilicate	11120-22-2; 10099-76-0	$PbSiO_3$	陶瓷
亚锑酸铅	Lead antimonate	13510-89-9	$Pb_3(SbO_4)_2$	颜料、玻璃着色
砷酸铅；砷酸氢铅； 酸性砷酸铅	Lead arsenate(1:1)	7784-40-9	$PbHAsO_4$	
亚砷酸铅；偏亚砷酸铅	Lead(II)arsenite	10031-13-7	$Pb(AsO_2)_2$	杀虫剂
氯酸铅；铬黄；金黄；活黄；毛黄	Lead chromate; chrome yellow	1344-37-2	$PbCrO_4$	颜料、涂料、墨水
钼酸铅	Lead molybdate	10190-55-3	$PbMoO_4$	颜料
铅酸钙	Calcium plumbate	12013-69-3	Ca_2PbO_4	氧化剂
四甲基铅； 四甲铅；TML	Tetramethyllead	75-74-1	$Pb(CH_3)_4$	
四乙基铅； 四乙铅；TEL	Tetraethyllead	78-00-2	$Pb(C_2H_5)_4$	
其他铅化合物以及合金	Other lead compounds and alloys			

●汞以及汞化合物

1．所属物质的例子

所属物质是指包含汞元素的全部物质。

中文名称 （通称、简称、化学名称等）	英文名称	CAS号码	化学分子式	主要指定用途
汞；金属汞	Mercury	7439-97-6	Hg	电极、水银灯
汞合金；汞齐	Mercury alloys ; amalgam			
氧化亚银；氧化银(I价)	Mercury(I)oxide	15829-53-5	Hg_2O	
氧化二汞；氧化汞(II价)	Mercury(II)oxide	21908-53-2	HgO	汞电池、防腐剂
氯化亚汞；氯化汞(I价)；甘汞	Mercury(I)chloride	10112-91-1	Hg_2Cl_2	电极、颜料
氯化二汞；氯化汞(II价)；升汞	Mercury(II)chloride	7487-94-7	$HgCl_2$	金属蚀刻、干电池、防腐剂
硝酸二汞；硝酸汞(II价)	Mercury(II)nitrate	10045-94-0	$Hg(NO_3)_2$	油毛毡、催化剂
硫酸亚汞；硫酸汞(I价)	Mercury(I)sulfate		Hg_2SO_4	电池
雷酸二汞；雷酸汞(II价)	Mercury(II) fulminate	628-86-4	$Hg(ONC)_2$	
醋酸二汞；醋酸汞(II价)	Mercury(II)acetate	1600-27-7	$Hg(CH_3COO)_2$	
甲基汞盐	Methylmercury salts	e.g. 22967-92-6	CH_3HgX ; X=Cl, Br, I, OH, etc.	防霉剂
乙烷基汞盐	Ethylmercury salts		C_2H_5HgX ; X=Cl, Br, I, OH, etc.	防腐剂、杀菌剂
丙基汞盐	Propylmercury salts		C_3H_7HgX ; X=Cl, Br, I, OH, etc.	
苯基汞盐	Phenylmercury salts		C_6H_5HgX ; X=Cl, Br, I, OH, etc.	防腐剂、杀菌剂
甲基氧乙烷基汞盐	Methoxyethylmercury salts		$CH_3OC_2H_4HgX$; X=Cl, Br, I, OH, etc.	杀菌剂、防霉剂
二烃基组汞	Dialkylmercury		R_2Hg ; R=alkyl group (C_nH_{2n+1})	
二苯基汞	Diphenylmercury	587-85-9	$(C_6H_5)_2Hg$	
其他汞化合物	Other mercury compounds			

●六价铬化合物

1．所属物质的例子

所属物质只有六价的铬元素。

因此，金属铬、铬合金、铬电镀不属于此类。

此外，三价铬化合物也不属于此类。

中文名称 （通称、简称、化学名称等）	英文名称	CAS号码	化学分子式	主要指定用途
三氧化铬；氧化铬（VI价）；无水铬酸；铬酸	Chromium(VI) oxide; chromium trioxide	1333-82-0	CrO_3	颜料、催化剂、电镀、鞣皮
铬酸锂	Lithium chromate	14307-35-8	Li_2CrO_4	防腐剂
铬酸钠	Sodium chromate	7775-11-3	Na_2CrO_4	防锈、鞣皮
铬酸钾	Potassium chromate	7789-00-6	K_2CrO_4	颜料、墨水、鞣皮
氯铬酸钾；三氧代氯酸钾	Potassium chlorochromate	16037-50-6	$K[CrO_3Cl]$	
铬酸铵	Ammonium chromate	7788-98-9	$(NH_4)_2CrO_4$	相片、催化剂
铬酸铜	Copper chromate	13548-42-0	$CuCrO_4$	媒染剂
铬酸镁	Magnesium chromate	13423-61-5	$MgCrO_4$	防锈、表面处理
铬酸钙；钙铬黄	Calcium chromate	13765-19-0	$CaCrO_4$	颜料、墨水、鞣皮
铬酸锶	Strontium chromate	7789-06-2	$SrCrO_4$	颜料、防锈
铬酸钡	Barium chromate	10294-40-3	$BaCrO_4$	防腐、颜料、陶瓷用着色剂
铬酸铅；铬黄；金黄；活黄；毛黄	Lead chromate; chrome yellow	1344-37-2	$PbCrO_4$	颜料、涂料、墨水
铬酸锌；黄锌；锌黄；铬酸锌；黄锌；锌黄；金铬酸盐；金黄	Zinc chromate	12018-19-8; 13530-65-9; 14018-95-2	$ZnCrO_4$	颜料、防腐剂
重铬酸钠；重铬酸钠	Sodium dichromate; sodium bichromate	10588-01-9	$Na_2Cr_2O_7$	颜料、防腐、相片、鞣皮
重铬酸钾	Potassium dichromate; potassium bichromate	7778-50-9	$K_2Cr_2O_7$	颜料、相片、电镀、电池、鞣皮
重铬酸铵	Ammonium dichromate; ammonium bichromate	7789-09-5	$(NH_4)_2Cr_2O_7$	颜料、相片、催化剂
重铬酸钙	Calcium dichromate; calcium bichromate	14307-33-6	$CaCr_2O_7$	防腐、催化剂
重铬酸锌	Zinc dichromate; zinc bichromate		$ZnCr_2O_7$	颜料
其他六价铬化合物	Other hexavalent chromium compounds			

●聚氯联苯（PCB）、聚氯化萘（PCN）、聚氯三联苯（PCT）
1．所属物质的例子

中文名称（通称、简称、化学名称等）	英文名称	CAS号码	化学分子式	主要指定用途
PCB；聚氯联苯；氯联苯	PCB; polychlorinated biphenyls	1336-36-3	$C_{12}H_{10-x}Cl_x$ (x=1-10)	热溶剂、润滑剂和电容器油
PCN；聚氯化萘；氯化萘	PCN; polychlorinated naphthalenes		$C_{10}H_{8-x}Cl_x$ (x≧3)	润滑剂、防腐剂、涂料
三氯萘	Trichloronaphthalene	1321-65-9	$C_{10}H_5Cl_3$	
四氯萘	Tetrachloronaphthalene	1335-88-2	$C_{10}H_4Cl_4$	
五氯萘	Pentachloronaphthalene	1321-64-8	$C_{10}H_3Cl_5$	
八氯萘	Octachloronaphthalene	2234-13-1	$C_{10}Cl_8$	
PCT； 聚氯三联苯	PCT; polychlorinated terphenyls	61788-33-8	$C_{18}H_{14-x}Cl_x$ (x=1-14)	润滑剂、防腐剂、涂料

●氯代烷烃（CP）
1．所属物质的例子

中文名称（通称、简称、化学名称等）	英文名称	CAS号码	化学分子式	主要指定用途
氯化烷烃；氯代烷烃；氯烷烃 碳原子数 10-13、氯 48 wt%以上	Short-chain Chlorinated paraffin C10-13, Cl ≧48 wt%	e.g. 85535-84-8	—	增塑剂、阻燃剂

●聚溴联苯（PBB）
1．所属物质的例子

中文名称（通称、简称、化学名称等）	英文名称	CAS号码	化学分子式	主要指定用途
PBB；多溴化联苯；聚溴二联苯	PBB; Polybrominated biphenyls;	e.g. 67774-32-7	$C_{12}H_{10-x}Br_x$ (x=1-10)	阻燃剂

●聚溴二苯醚（PBDE）

1．所属物质的例子

中文名称（通称、简称、化学名称等）	英文名称	CAS号码	化学分子式	主要指定用途
聚溴二苯醚；聚溴二苯基氧化物；聚溴化二苯醚；PBDE；PBDO；PBBE	Polybromodiphenyl ethers; polybromodiphenyloxides; polybrominated biphenyl ethers; PBDE; PBDO; PBBE		$C_{12}H_{10-x}Br_xO$ (x=1-10)	阻燃剂
十溴二苯醚；十溴二苯基氧化物；DBDE；DecaBDE；DBDPE；DBDPO	Decabromodiphenyl ether; decabromodiphenyloxide; DBDE；DecaBDE；DBDPE；DBDPO	1163-19-5	$C_{12}Br_{10}O$	阻燃剂（PE、ABS、聚酯用）
八溴二苯醚；八溴二苯基氧化物；OBDE；OctaBDE	Octabromodiphenyl ether; octabromodiphenyloxide; OBDE；OctaBDE	32536-52-0	$C_{12}H_2Br_8O$	阻燃剂（ABS、HIPS、LDPE用）
六溴二苯醚；六溴二苯基氧化物	Hexabromodiphenyl ether; hexabromodiphenyloxide	36483-60-0	$C_{12}H_4Br_6O$	阻燃剂
五溴二苯醚；五溴二苯基氧化物；PentaBDE	Pentabromodiphenyl ether; pentabromodiphenyloxide; PentaBDE	32534-81-9	$C_{12}H_5Br_5O$	阻燃剂

●三丁基锡化合物、三苯基锡化合物

1．所属物质的例子

仅包括三丁基锡化合物和三苯基锡化合物，二丁基锡化合物、二苯基锡化合物等不属于此类。

因此，金属锡、锡合金、电镀锡、锡的无机化合物不属于此类。

所属物质的例子如下所示。

中文名称 （通称、简称、化学名称等）	英文名称	CAS号码	化学分子式	主要指定用途
三丁基锡溴化物 溴化三-n-丁基锡	Tributyl tin bromide	1461-23-0	$(C_4H_9)_3SnBr$	杀菌剂
双(三丁基锡)=氧化物 三丁基锡氧化物 双(三丁基锡)氧化物	Tributyltin oxide; Bis(tributyltin)oxide; Distannoxane, hexabutyl-	56-35-9	$C_{24}H_{54}OSn_2$	杀菌剂
三苯基锡	Triphenyl tin	668-34-8	$(C_6H_5)_3Sn$	杀菌剂
三苯基锡=氯化物 三苯基锡氯化物 氯化三苯基锡	Triphenyltin chloride; Fentin chloride; Stannane, chlorotriphenyl-	639-58-7	$(C_6H_5)_3SnCl$	杀菌剂
三苯基锡=氢氧化物 三苯基锡氢氧化物 羟基三苯基锡 氢氧化三苯基锡	Triphenyl tin Hydroxide; Fentin hydroxide; Stannane, Bydroxytriphenyl-	76-87-9	$(C_6H_5)_3SnOH$	杀菌剂
三苯基锡=N,N’-二甲基二硫代氨基甲酸盐 三苯基锡二甲基二硫代氨基甲酸三苯基锡 [(二甲基二硫代氨基)硫]三苯基黄锡	Triphenyl tin N,N’-dimethyldithiocarbamate; Stannane, [[(dimethylamino)thiomethyl]thio]triphenyl-	1803-12-9	$(C_6H_5)_3Sn(CH_3)_2NCS_2$	
三苯基锡=氟化物 三苯基锡氟化物 氟化三苯基锡 氟化三苯基黄锡	Triphenyl tin fluoride; Fentin fluoride	379-52-2	$(C_6H_5)_3SnF$	
三苯基锡乙酸盐 醋酸三苯基锡 (醋乙酐)三苯黄锡	Triphenyl tin acetate; Fentin acetate; Stannane, (acetyloxy)triphenyl-	900-95-8	$(C_6H_5)_3SnOCOCH_3$	
三苯基锡脂肪酸盐(仅限于脂肪酸的碳原子数为 9、10 或 11 之物)	Triphenyl tin fatty acid salts	18380-71-7 18380-72-8 47672-31-1 94850-90-5		

中文名称 （通称、简称、化学名称等）	英文名称	CAS号码	化学分子式	主要指定用途
三苯基锡=氯代乙酸盐 三苯基锡一氯化乙酸盐 [(氯代乙酸)氧化]三苯基]黄锡	Triphenyl tin chloroacetate; (chloroacetoxy)triphenylstannane	7094-94-2	$(C_6H_5)_3SnOCOCH_2Cl$	
三丁基锡甲基甲基丙烯酸盐 甲基丙烯酸三丁基锡	Tributyl tin methacrylate; Tributyl(methacryloyloxy) stannane; Stannane, Tributyl[(2-methyl-1-oxo-2-propeny) oxy]-	2155-70-6	$(C_4H_9)_3SnC_4H_5O_2$	
双（三丁基锡）富马酸盐	Bis(tributyl tin) fumarate	6454-35-9 24291-45-0	$C_2H_2(COO)_2$ $([C_4H_9]_3Sn)_2$	
三丁基锡氟化物	Tributyl tin fluoride	1983-10-4 7304-48-5	$(C_4H_9)_3SnF$	
双（三丁基锡）2，3一二溴丁二酸盐	Bis(tributyl tin)2,3-dibromosuccinate	31732-71-5 56323-17-2	$([C_4H_9]_3Sn)_2C_2H_2$ $(BR)_2(COO)_2$	
三丁基锡乙酸盐 (醋酸三丁基锡)	Tributyl tin acetate	56-36-0	$(C_4H_9)_3SnOCOCH_3$	
三丁基锡=月桂酸盐 三丁基锡月桂酸盐 三丁基[(1-氧代十二烷基)羟基]黄锡	Tributyl tin laurate; Tributyl(lauroyloxy)stannane	3090-36-6	$(C_4H_9)_3SnC_{12}H_{23}O_2$	

中文名称 （通称、简称、化学名称等）	英文名称	CAS号码	化学分子式	主要指定用途
双（三丁基锡）苯二甲酸盐 三丁基锡苯二甲酸盐 (邻苯二酰二羟基)双[三丁基锡]	Bis(tributyl tin) phthalate; [(Phthaloylbis(oxy)]bis(tributylstannane)	4782-29-0	$(C_6H_4)(COO)_2([C_4H_9]_3Sn)_2$	
三丁基锡=磺酸盐 三丁基锡磺酸盐 磺酸三丁羟基黄锡	Tributyl tin sulfamate; Stannane, [(aminosulfonyl)oxy]tributyl-	6517-25-5	$(C_4H_9)_3SnSO_3NH_2$	
双（三丁基锡）=马来酸盐	Bis(tributyl tin) maleate	14275-57-1 24291-38-3	$C_{28}H_{56}O_4Sn_2$	
三丁基锡=氯化物 三-n-丁基锡氯化物	Tributyl tin chloride; Tributylchlorostannane; Stannane, tributylchloro-	1461-22-9 7342-38-3	$(C_4H_9)_3SnCl$	
三丁基锡＝环戊烷羧酸盐和类似化合物的混合物 三丁基锡萘酸盐 萘酸三丁基锡	Mixture of tributyl tin cyclopentanecarboxylate and its analogs Stannane, tributyl-, mono(naphthenoyloxy) Derives.; Tributyltin naphthenate	85409-17-2		
三丁基锡 ＝ 1,2,3,4,4a,4b,5,6,10,10a-十氢-7-异丙基-1,4a-二甲基-1-菲羧酸盐和类似化合物的混合物 三丁基锡酪氨盐 三丁基锡酪氨酸盐	[1R-(1alpha,4a,beta.,4b,alpha.,10a.alpha.)]-tributyl[[[1,2,3,4,4a,4b,5,6,,10,10a-decahydro-7-isopropyl-1,4a-dimethyl-1-phenanthryl]carbonyl]oxy]stannane	26239-64-5	$C_{32}H_{56}O_2Sn$	
烷基=丙烯酸盐=甲基丙烯酸甲酯=甲基丙烯酸三丁基锡的聚合物（烷基=丙烯酸盐的碳原子数限定为 8 个） 丙烯酸甲酯、甲基丙烯酸三丁基锡聚合物	Octyl crylate-Methyl methacrylate-Tributyltin methacrylate copolymer (alkyl; C=8)	67772-01-4		

●石棉
1．所属物质

中文名称 （通称、简称、化学名称等）	英文名称	CAS号码	化学分子式	主要指定用途
石棉（总称）	Asbestos	1332-21-4; 132207-32-0; 132207-33-1		绝缘体、填料
蓝石棉	Crocidolite	12001-28-4	$Na_2Fe_5(Si_8O_{22})(OH)_2$	绝缘体、填料
温石棉	Chrysotile	12001-29-5	$Mg_3Si_2O_5(OH)_4$	绝缘体、填料
铁石棉	Amosite	12172-73-5	$(Mg,Fe)_7Si_8O_{22}(OH)_2$	绝缘体、填料
直闪石	Anthophyllite	77536-67-5	$(Mg,Fe)_7Si_8O_{22}(OH)_2$	绝缘体、填料
透闪石	Tremolite	77536-68-6	$Ca_2Mg_5Si_8O_{22}(OH)_2$	绝缘体、填料
阳起石	Actinolite	77536-66-4	$Ca_2(Mg,Fe)_5Si_8O_{22}(OH)_2$	绝缘体、填料

●甲醛
1．所属物质

中文名称 （通称、简称、化学名称等）	英文名称	CAS号码	化学分子式	主要指定用途
甲醛（单基物）、 福尔马林	Formaldehyde; formalin; formic aldehyde; formol	50-00-0	HCHO	防腐剂、单基物（如，酚醛树脂和三聚氰胺树脂）

●聚氯乙烯（PVC）以及 PVC 混合物
1．所属物质的例子

中文名称 （通称、简称、化学名称等）	英文名称	CAS号码	化学分子式	主要指定用途
PVC 和 PVC 混合物；聚氯乙烯和聚氯乙烯混合物	PVC and PVC blends; polivinylchloride and polivinylchloride blends	e.g. 9002-86-2		氯乙烯树脂

SS-00259-1

部件和材料中的环境管理物质　管理规定

第四版 附注

第三版改订后已经过了 1 年，此版是为了对应在此期间各国环境有关法令和地区、团体的动向，并对第三版发行后汇总的询问和意见进行了整理。

此外，此次改订时，经确认，PART 0 的内容没有变更，与第三版的内容相同。

1. “目的”

为了明确管理范围，把“计划全废物质”“计划削减物质”变更为“计划全废物质”“适用对象外项目”。

2. “适用范围”

2.1 产品的适用范围以及部件和材料的适用范围

考虑到 SS-00259 的影响范围，把“2.1 产品的适用范围”和“2.2 部件和材料的适用范围”，调整为“2.1 部件和材料的适用范围”“2.2 产品的适用范围”。

2.2 部件和材料的适用范围　修理用部件

为了与其它文件统一，把服务用零件变更为修理用零部件，并定义为“已出货产品的修理用部件”。

3. “术语的定义”

3.1 管理级别　3 级

为了进一步明确 3 级管理级别的定义，变更为“目前虽然没有规定全废的日期目标，但指定了全废的使用部件、材料中含有的物质及其用途。”。

3.2 管理级别　适用对象外

将级别 1～3 定义为全废的物质，作为适用对象外补充了“法令规定对象外或在现阶段没有代替技术方案的物质和用途部位。”。

4. “环境管理物质”

4.1 表 4.1　环境管理物质名称一览

把聚氯化萘（PCN）归到有机氯化合物的聚氯联苯（PCB）类中，同时追加了新规定的物质聚氯三联苯（PCT）。

将有机锡化合物中的管理对象物质限定为“三丁基锡化合物”和“三苯基锡化合物”，削除了有机锡化合物的记载。

偶氮化合物的管理对象不是所有的偶氮化合物，为了限定部分偶氮化合物，改为“特定偶氮化合物”。

4.2 镉以及镉化合物

为了便于阅览，把分散到各种物质中的有关电池的内容，集中进行了汇编。

将至今为止规定为 2 级的“直流电动机、开关、继电器、断路器等电接点”、“温度保险丝的可熔体”、“玻璃以及玻璃涂料的颜料、染料(用于玻璃的颜料、染料以及玻璃用涂料)”、“焊锡(镉含量为 20ppm 以上的焊锡)”、“荧光显示装置中含有的荧光体、CdS 光导电池单元”、“电阻（玻璃料）”变为 1 级，立即执行禁止交货。

在新规定的 2 级中，对于过去不受管理的黄铜、锌金属等含有大量锌的金属部件中非有意添加的杂质，也新制定了应控制在 100ppm 以下的管理基准。这是因为再生材在市场上被使用，100ppm 以下的管理较为困难。

将至今为止规定为 3 级的“要求使用高可靠性的电接点电镀而没有代替材料的产品”、“光学玻璃、滤光玻璃”，作为适用对象外。

对于测定标准，为了强调预处理注意事项的重要性，变更为“发生沉淀物（不溶物）时，必须采用任何方法（碱溶融法等）将其完全溶解制成溶液”。 另外，对预处理还补充了不适于采用的溶出法“ASTM F963-96a”、“ISO 8124-3”。

4.3 铅以及铅化合物

为了便于阅览，把分散在各种物质中的电池相关内容另外进行了集中编集。

将至今为止规定为 2 级的“零部件的外部电极、引线端子等经表面处理的，内装在 AC 适配器、遥控器、半导体器件中的零部件”、“对铅为 85 wt%以下的有铅焊锡，焊锡中的铅含量超过 1000 ppm 的产品”、“含有超过允许浓度＊1 的各种合金（包括焊锡材料)”、“AC 适配器、电源电缆、连接电缆、遥控器、鼠标、设备的外露部分以外所使用的塑料（包括橡胶）材料中的稳定剂、染料”、“机器外露部位以外所使用的涂料、墨水”规定为 1 级，立即执行禁止交货。

将至今为止规定为 3 级的“部件、器件连接用高熔点焊锡（铅为 85 wt％以上的有铅焊锡)”、“电子陶瓷部件【压电元件、陶瓷感应材料、磁性材料（铁氧体)】”、“各光学玻璃、滤光玻璃”、“显像管、电子部件、荧光显示管所使用的玻璃材料”、“电子部件中使用的玻璃材料，包括电阻、导电浆（银浆、铜浆)、粘接剂、玻璃料、密封材料等”、“含有以下合金（*1)”，规定为适用对象外。

*1)合金的种类	含铅允许浓度
钢材	0.35 wt%以下
铝合金	0.4 wt%以下
铜合金（包括铸铜、磷青铜）	4 wt%以下
焊锡	1000 ppm 以下。

另外，为了与法令的表现一致，对于允许浓度，改为使用“～以下”。

把“C4 (controlled Collapse Chip Connection)焊锡球下的焊锡浆”的说法变更为“连接 Flip Chip 器件封装内部的半导体芯片和连接电路板的焊锡”,另外还补充了“使用于连接微处理器端子和器件封装的焊锡中由 2 种以上的元素组成，铅的含量为 80wt%以上 85wt%以下的焊锡”。

对于测定标准，为了强调预处理注意事项的重要性，变更为“发生沉淀物（不溶物）时，必须采用任何方法（碱溶融法等）使其完全溶解制成溶液。”。另外，对预处理还补充了不适于采用的溶出法“ASTM F963-96a”、“ISO 8124-3”、“EN 1122”。

4.4 汞以及汞化合物

为了便于阅览，把分散在各种物质中的电池相关内容另外进行了集中编集。

将至今为止规定为 2 级的“小型日光灯：每支的含量为 5 mg 以上”、“直管日光灯：每支的含量为 5 mg 以上”、“适用对象外项目以外的所有用途”规定为 1 级，立即执行禁止交货。

将至今为止规定为 3 级的“小型日光灯、直管日光灯以外的灯（高压汞灯等)”、“小型日光灯：每支的含量为 5 mg 以下”、“直管日光灯：每支的含量为 5 mg 以下”规定为适用对象外。

4.5 六价铬化合物

对于皮制品，因为在最终产品的状态进行了六价铬的溶出评价，确认了不溶出，所以删除了“皮产品的鞣革剂”。

将至今为止规定为 2 级的“作为电镀表面的防锈处理（螺丝、钢板等)、墨水或涂料的颜料等的成分而含有的所有用途”规定为 1 级，立即执行禁止交货。

4.6 有机氯化合物

把聚氯化萘（PCN）归到有机氯化合物的聚氯联苯（PCB）类中，同时补充了新物质聚氯三联苯（PCT)。

为了与荷兰的法规统一，把氯代烷烃（CP）的氯含量 50wt％以上变更为 48wt％以上。

4.7　有机溴化合物

对于“聚溴二苯醚（PBDE)”，将至今为止定为 2 级的“使用 2002 年 12 月以前的模具制造的部件（限定于向欧洲以外出口的 TV、显示器的框体）2003 年 1 月以后的新型模具部件将禁止采用”规定为 1 级，立即执行禁止交货。

4.8　三丁基锡化合物、三苯基锡化合物

因为只将有机锡化合物中的“三丁基锡化合物”和“三苯基锡化合物” 限定为管理对象物质，所以删除了有机锡化合物的记述。

4.9　偶氮化合物

因为偶氮化合物的管理对象不是所有的偶氮化合物，而仅限定于部分偶氮化合物，所以变更为“特定偶氮化合物”。

为了更加明确 3 级，补充了按照德国日用品规则的试验法对偶氮化合物进行分解，有可能产生表 4.2a 中的胺，”的记述。

4.10　聚氯乙烯（PVC）以及聚氯乙烯混合物

由于市场上可以代替的部件、材料很少等原因，进行了重新分类。

进行了详细列表区分，从可以代替的部位开始适用，将文件编号 QAR-04-006 中所记载的“用作为包装材的塑料层（气泡防震布、外包装盒、防护袋等)”、“遥控器、电缆等与产品一同装包的包装材（袋、胶带、外包装盒等)”、“捆绑带(聚氯乙烯制)”定为 1 级，立即禁止使用。

把“热收缩软管”、“使用于木工产品外包装的塑料布、包封类（木制箱、木制扬声器的包封等)”定为 2 级，从规定日起立即禁止交货。另外，把“使用带电缆的连接器等线材的零件、马达引线等机内布线用电线材”、“电源线(包括插头、连接器、电缆卡头)：[2P、3P（电气安全法）]”、“机器内外部使用的绝缘和保护用的涂层、绝缘软管、绝缘板、装饰板、标签、背带、衬垫、支架、护盖、通风管等”、“连接电缆 1(机器用挠性电缆：耳机、微型耳机、耳机麦克风用电线等)”“ 连接电缆 2：USB、iLink、RCA、AC 适配器次级引线、多芯复合电缆、扬声器电缆等”、“ 索尼设计的排线、加工线材(同轴电缆、扁平电缆、双重屏蔽电线、铠装线等)”定为 2 级，变更至今禁止交货的规定，改为自开始日期起索尼所投产的新型号开始适用禁止交货。

把“电源线(包括插头、连接器、电缆卡头)：[2P、3P（U/C）]”、“画图纸”、“电容器、电源开关、保险丝用途的绝缘盖”,“部件交货人的部件包装用托盘、料管、带盘、包装卷带等”定为 3 级。

把至今规定为 3 级的“树脂用粘合剂”、“高压塑料电线”、“绝缘带”、“扬声器托架”、“ 出口 EU 的电源线(没有能符合产品安全规定的代替技术时继续使用)”、“1 级、2 级、3 级以外的对象中，使用氯乙烯共聚、聚氯乙烯与其它聚合物的共混物的部件”规定为适用对象外。另外，“变压器引线部（清漆浸渍的部分)”、“卷线”、“机内布线材中，AWG36 以上的极细电线”、“业务用机器中不能使用通用电缆的用途（广播电视台用摄像机电缆、麦克风电缆等)”由于没有代替技术，因此规定为适用对象外。

4.11　包装材料的重金属规定

由于明确了包装材料的定义，所以补充了具体的分类。

4.12　有关电池的补充事项

为了便于阅览，把各种物质（镉、铅、汞）中有关电池的内容编集到一起。

将至今在铅的项目中规定为 3 级的“除小型密封铅电池以外的电池和电池组，且其铅含量占总重量的 0.4%以下的电池。但是，对于塑料（包括橡胶)、涂料、墨水中的铅和有铅焊锡，则适用于 1 级应按照规定执行。",汞项目中规定为 3 级的“钮扣电池中，其汞含量占电池的总重量的 2%以下的电池。"，以及“钮扣电池以外的电池和电池组中，其汞含量占电池总重量的 0.0005%以下的电池。"，规定为适用对象外。

4.13　其它管理物质的补充

SS-00259 第四版的补充物质仅有聚氯三联苯（PCT)，虽然也对补充其它物质进行过研讨，但是由于没有用于索尼产品的可能性或者不具有明确的风险等原因，因此没有补充。

SS-00259-1

部件和材料中的环境管理物质　管理规定

第三版 附注

第二版改订后经过 1 年、为了适应在此期间各国的环境有关法令和地区、团体的动向，以及第二版发行后的询问/意见内容进行了整理。

另外，这次改订时，经确认，PART 0 的内容没有变更，与第二版的内容相同。

1. “部件和材料的适用范围”

由于部分服务部件规定了特别处置（对于已经有交货业绩，材料、模具不能变更等部件的处理）的运用，所以补充了“有关部分服务部件按照另外的通知书进行处理”的内容。

2. “术语的定义”

2.1 管理级别　3 级

为了更加明确 3 级管理级别的定义，补充了“从被判断为可以确立代替零件、开发材料和代替记述的产品努力积极采用”的内容。

2.2 SS-00259 中塑料的定义

在第 2 版中没有特别定义的塑料，在第 3 版作为 SS-00259 中的塑料定义为“合成高分子物质形成的材料或素材”。作为事例包括合成高分子生成的纤维、胶片、胶带、成形产品、合成橡胶产品、植物原料塑料、粘合剂等。

3. “环境管理物质”

3.1 镉以及镉化合物

在 1 级表面处理中，为了明确代替技术困难的部位属于对象外，补充了“要求高可靠性的电接点电镀而没有代替材的除外”的内容。

根据欧盟电池规程建议，2 级对象的交货禁止时期镍镉电池新交货的期限 2003 年 4 月 1 日已经过了，因此变更为 1 级。另外，所有的镍镉电池期限由 2005 年 1 月变更为 2007 年 1 月。

补充了确立代替技术困难的 3 级对象的光学玻璃、滤光玻璃的内容。

为了明确测定对象，对允许浓度补充了测定对象: 塑料（包括橡胶）、涂料、墨水的内容。

3.2 铅以及铅化合物

根据欧盟电池规程建议，对于 1 级，补充了“除小型密封铅电池的电池和电池组，铅含有量达总重量的 0.4％以上的产品”的内容。

为了明确 2 级的对象部位，补充了机器外露部位中使用的涂料、墨水（从 2004 年 4 月 1 日）、机器外露部位以外使用的涂料、墨水（从 2005 年 1 月 1 日）的内容。

因为确立代替技术困难，对 3 级补充了“压电糙瓷部件（铁氧体)”“光学玻璃、滤光玻璃”“无电解镀镍、镀金时的稳定剂、添加剂的铅”“C4（Controlled Collapse Chip Connection）补片下的焊锡糊剂”“除小型密

封铅电池的电池和电池组，含铅量达总重量 0.4％以下的。但是，关于塑料（包括橡胶）、涂料、墨水中的铅和有铅焊锡属于 1 级和 2 级的按照规定处理”的内容。另外，作为 3 级　铜合金的补充，补充了“包括铸铜、磷青铜”的内容。

为了明确测定对象，在允许浓度栏，补充了“测定对象：塑料（包括橡胶)、涂料、墨水”的内容。

作为测定标准，补充了有关预处理法的事例。

3.3 汞以及汞化合物

根据中国电池规定限制，对于 1 级补充了“钮扣电池，该汞含量达电池总重量 2％以上的”“钮扣电池以外的电池和电池组，该汞含量达电池总总量 0.0005％以上的”的内容。（电池的汞量必须达到上述标准）

根据欧盟欧洲危险物质使用限制规程建议的最新规定，2 级　直管日光灯每支的含量 10mg 以上 20mg 以下变更为 5mg 以上。同样，3 级　直管日光灯每支的含量 10mg 变更为 5mg 以下。另外，补充了“钮扣电池，该汞含量达电池总重量 2％以下的”“钮扣电池以外的电池和电池组，该汞含量达电池总重量 0.0005%以下的”内容。

根据中国电池规定限制，消除了 2 级对象的“氧化银电池、碱锰钮扣电池、空气电池”的内容。

3.4 六价铬化合物

在附注中，为了明确规定部位，补充了“金属铬、合金铬为对象之外”的内容。因为现在不使用 1 级对象的“电池、催化剂”，所以消除了。

3.5 有机氯化合物

因为北美、日本很难获得、现在没有阻燃剂用途没有使用事例，所以消除了灭蚁灵。

3.6 有机溴化合物

根据四溴双酚-A-双-（2,3-二溴丙醚）；商品名 FR-720 等的荷兰法规定限制的废止，统一到 3 级其它的有机溴化合物里了。

3.7 甲醛

在第 2 版中作为对象物的刨花板变更为更一般的名称纤维板、木屑板了。

在第 2 版，关于测定方法，重新调查了各国、各地区的法律、行业规格等，采用了 EN 717-1 气密试验室法和 EN 120 穿孔法。在第 3 版增加了日本 JIS 规格的干燥器法。用此方法测定的甲醛排放量与气密试验室法相关联，干燥器法（JIS A 5905、A 5908）排放标准值相当于 F☆☆☆。

3.8 聚氯乙烯以及聚氯乙烯混合物

关于 2 级包装垫材，为了规定部位，变更为用于包装材料的包装垫材（气泡布、气泡膜、反射垫(保护袋)等)。另外，关于绝缘板也为了明确规定部位，变更为 2 级“机器外部使用的绝缘板、绝缘管、绝缘盖”、3 级“机器内部使用的绝缘板、绝缘管、绝缘盖”。

3.9　包装材料的重金属限制

关于包装材料的各种原材料，必须对 4 种重金属进行管理，以便符合各环境管理物质标准。

4 种重金属合计浓度标准被规定，但是关于塑料（包括橡胶)、涂料、墨水，规定了各允许浓度为 5 ppm 以下、铅允许浓度为 100ppm 以下（2004 年 4 月 1 日起实施)，再加上其它重金属合计为 100ppm 以下作为标准值。即，虽然镉 4ppm 铅 98ppm 时符合各自的标准，但是合计为 102ppm，仍然不能满足法的规定。

另外，不能用规定的装置测定六价铬时，先测定总铬，仅在超过 100ppm 时分析六价铬。
为了明确对象，追加了“零部件交货人所有的搬运箱属于对象外”的内容。

SS-00259-1

部件和材料中的环境管理物质　管理规定

第二版 附注

2002 年 4 月发行的第一版，与当初相比其内容复杂且较难于理解。
因此为了切实掌握每一种物质的信息，进一步加强公司内部的管理，现修改为按各环境管理物质记述其管理水平，以便更容易和切实地理解和掌握这些信息，为此对内容及构成做全面修改，编制了第二版。
在第一版中为对环境相关物质进行管理而划分为“禁用的物质”、“完全废止的物质”。第二版中，修改为“环境管理物质”，根据其“对象”（物质、使用部位或用途的组合）来设定管理级别，这就是本版修订的要点。
同时，在发行第一版后，就解释方法、与法律相关的查询 / 说明、行业的实际情况重新进行了调查和研究，并重新设定了适用范围、物质鉴定、禁止供货时期。
SS-00259-0 一般原则虽然作为 B 级（限定于公司内部），但在这次修订中对记述内容进行整理后改为 C 级，以便让客户更加理解本标准的基本方针和索尼公司的想法。

1. “适用范围”

新增加了“产品的适用范围”，明确了委托生产产品的操作步骤。因此，明确了在索尼公司内部和事业所使用的生产设备，办公设备等并不适用于 SS-00259 的规定。
此外，在“部件和材料的适用范围”中，包装材料、附件（电子产品的附属品或者辅助产品）、附属材料等的内容也更加具体化了。

2. “术语的定义”

1 ）在第一版中作为环境相关物质的管理方法，称呼并定义为“禁用的物质”、“完全废止的物质”，但存在例外，且在 1 年后发生了禁止使用部位（用途）等，从而造成了混乱。
作为第二版中环境管理物质的管理方法变为指定对象（物质和使用部位或者用途）的管理方法，并且废除了对于物质的“禁用”、“完全废止”等术语。
第二版中对这些物质设置其管理级别，将逐渐走向全面废除。
2 ）追加了“含有”和“杂质”的定义。但是，塑料中的镉和铅，如本文所示，将“5 ppm 以下”、“100 ppm 以下”的标准值作为含有其杂质的值。
3 ）第一版中将应对时期用“完全废止的目标期限”来表示，由于含义暧昧，在第二版中定义为“禁止供货时期”。

3. “环境管理物质”

3.1 镉以及镉化合物

禁止供货时期尽可能作为立即执行的对象（使用部位、用途）加以记载，就有关测定标准也追加了一般装置与预处理方法。
2 级中的禁止供货时期，除镍、镉电池以外，从 2003 年 4 月 1 日开始变更为 2005 年 1 月 1 日。
金属部件（以锌为主要材料的制品）中镉的杂质含量目前暂不置评。不论焊锡的种类如何，焊锡中的镉杂质均为 20 ppm 以下。
就塑料中的镉，由于在荷兰等国家法律中明确规定其含量限制及禁止使用（含量未明确表示），索尼以不含有

该物质为原则，对含量的实际测定（分析）等进行非常严格的管理。

但是就实际测定而言，在将原材料从天然原料进行精制的过程中，考虑到工业上尚不能去除的杂质等因素，采用 ICP-AES 等精密分析方法的数值，以其含量在 5 ppm 以下为设定允许含量。

3.2 铅以及铅化合物

重新制定了塑料中的允许浓度为 100 ppm 以下的标准。这其中包括了从其它金属材料的“带入”和测定装置的检测下限。对于预处理，采用了与镉同样的方法。

焊锡中的铅杂质为 1000 ppm 以下，从 2005 年 1 月 1 日起适用。符合此条件的可以作为无铅焊锡使用。

对于依据含量的实际测定（分析）管理等运用方法，将遵照采购中心质量保证部另行制定的环境质量管理的指导方针。

3.3 汞以及汞化合物

汞以及汞化合物，对小型日光灯、直管日光灯制定了固定汞含量，小型日光灯 1 支平均含量为 10 mg，直管日光灯 1 支平均含量为 20 mg，其各自超出的部分成为 1 级（立即禁止）。今后汞的含量将依次减少。

3.4 有机氯化合物

增加了灭蚁灵。指定为化学审查法的第一种特定化学物质，禁止生产、销售和使用，所以预计将用于阻燃剂方面。

在有机氯化合物中的氯代烷烃（CP），如 2002 年 8 月发行的 SS-00259 AMENDMENT 所述，只有已经明确了限定对环境有危险的短链型氯代烷烃（氯含量 50 wt%以上）的用途，并确定为 1 级（立即禁止）。其它用途则确定为 3 级。

短链型以外的氯代烷烃，按“其它有机氯化合物”处理。

多氯联苯（PCB）以及多氯萘（PCN），由于有关化学物质等的检验和制造等法律中已将其指定为 1 级物质，按 1 级处理。

此外的其它有机氯化合物，作为阻燃剂和增塑剂使用的产品，由于其环境危险性尚不明了，追加为 3 级。

3.5 有机溴化合物

由于四溴双酚-A-双-（2,3-二溴丙醚）（商品名 FR-720）等在荷兰法律上禁止生产和销售，因此特意予以追加。

在初版中作为禁止使用物质的 PBDE，已查明在一部分设备中已经使用。索尼在对各国的法律、环境危险等进行调查的结果发现，目前只是集中在用途上，禁止在新机型中使用，因此决定作为依次全面废除处理，所以新设定了管理级别 2 级。

此外的其它有机溴化合物，作为阻燃剂和增塑剂使用的产品，由于其环境危险性尚不明了，追加为 3 级。

3.6 有机锡化合物

配合环境中期行动计划的修订，三丁基锡化合物 / 三苯基锡化合物被指定为 1 级（立即禁止）。

3.7 偶氮化合物

在偶氮化合物的分解而不能产生的胺中增加了四氨基偶氮苯。

作为参考，在偶氮化合物分解萃取胺的试验方法中增加了 LMBG 82.02.2 ～ 4（LMBG：德国日用品规则）。

这一测试系从分解偶氮化合物确认产生的胺，花费成本和时间，所以推荐采用基色比色法，（C.I.Pigment），可以从处理颜料及染料的厂家及团体处得到有关信息。

（团体参考信息）

•化成品工业协会

•ETAD: Ecological and Toxicological Association of Dyes and Organic Pigments Manufacturers

※通过 ETAD 的试验结果可知，下表中所示的偶氮有机颜料与德国的胺限制规定：第五次修订政令的日用品规则并不抵触。

C.I. Name	C.I. No.	CAS No.	Regulatory status
Pigment Yellow 12	21090	6358-85-6	A
Pigment Yellow 13	21100	5102-83-0	A
Pigment Yellow 14	21095	5468-75-7	A
Pigment Yellow 14	-	7621-06-9	A
Pigment Yellow 17	21105	4531-49-1	A
Pigment Yellow 55	21096	6358-37-8	A
Pigment Yellow 83	21108	5567-15-7	A
Pigment Yellow 126	21101	90268-23-8	A
Pigment Yellow 127	21102	68610-86-6	A
Pigment Yellow 174	21098	78952-72-4	A
Pigment Yellow 176	21103	90268-24-9	A
Pigment Orange 13	21110	3520-72-7	A
Pigment Orange 16	21160	6505-28-8	A
Pigment Orange 34 Pigment Orange 35 Pigment Orange 37	21115	15793-73-4	A

NOTE

C.I. : Color Index （色图索引）

英国出版的染料、颜料的色图索引

Regulatory status = A : Exempted under the 5th Amendment

3.8 甲醛

第一版中仅确定了甲醛的排放浓度，但人们对测定方法提出了很多问题。我们在作出规定时，对各国、地区的法律及行业标准等进行重新调查，采用 EN 717-1 的室内法以及 EN 120 的打孔法作为标准。

我们采用了室内法以及打孔法的所有试验和标准。

此外，还采用了日本 JIS 标准、JAS 标准等干燥器法，但未明确这一方法测定的甲醛排放量和室内法、打孔法的关系。

JIS 中虽然对 E0 材料可以适用这一 SS 的标准，但对 E1 材料有必要加以确认。

3.9 聚氯乙烯以及聚氯乙烯混合物

使用聚氯乙烯聚合物的树脂，因其成本、加工性能和阻燃性能等特点，在多数部件、设备中得到采用。

由于极难掌握聚氯乙烯与其它树脂的混合和与其它聚合物的共聚产品的实际情况，作为走向全面废除聚氯乙烯的手段，将使用量多的聚氯乙烯混和物（为把聚氯乙烯做成产品而添加的稳定剂、填充材料、阻燃剂、颜料等）作为对象，修订为管理级别 2 级。

在这里，只是就氯乙烯的同聚物进行了规定，对于共聚物和接枝聚合物，由于技术上难以找到替代材料，所以

确定为管理级别 3 级。

在表 4.2 虽然没有记载，对于使用聚氯乙烯的捆绑带，由于检测出了大量的镉，已经变更替代材料。

此外,对于用于化学装置中的工厂设备、仪器等的硬质氯乙烯材料以及使用这种材料的部件等聚氯乙烯制品(螺栓、螺母、垫片等)，不包括在 SS-00259 的规定范围内，由于在技术上没有适当的替代材料，所以在本技术标准中没有增加使用限制。

3.10 包装材料的重金属限制

对于包装材料的各种原材料，除满足各自的环境管理物质标准之外，有必要对四种重金属进行管理。

虽然已规定了四种重金属的合计浓度标准，但作为标准值，仍规定了塑料中镉允许浓度为 5 ppm 以下，加上其它重金属合计在 100 ppm 以下。即镉 4 ppm、铅 98 ppm 虽符合各自的标准，但由于合计为 102 ppm，便不能满足法律的要求。

此外，由于六价铬在规定的装置中不能测定，所以规定先测定总铬，当超出 100 ppm 时再分析六价铬。

3.11 制造部件、设备时不得使用的物质

在初版中规定的制造时不得使用的物质，与本标准的目的有些偏离。此外，与其它的物质性质也不相同，所以在本技术标准中予以删除。特别是破坏臭氧层物质（CFC、HCFC、溴甲烷、1,1,1-三氯乙烷、四氯化碳），各国已公认应积极遵守蒙特利尔议定书，作为进货单位的企业自然应自觉加以限制。此外，对于含氯有机溶剂（1,1,2-三氯乙烷、1,2-二氯乙烷、1,1-二氯乙烷、1,2-二氯乙烯、二氯甲烷、三氯甲烷、三氯乙烯、四氯乙烯），系属于水质污染防止法及劳动安全卫生法应予规定的物质，本标准不可能指定各国法规所包括的所有物质，所以，作为企业的责任，进货单位应遵守本国的法规。

对于这一点，应遵守采购中心质量保证部另行制定的绿色伙伴制度等有关环境质量管理的指导方针，依靠客户的自主管理及污染物削减活动。